

JULY-AUGUST 2012

ARMY SUSTAINMENT

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U.S. ARMY TRANSPORTATION CORPS

1942 2012



SPEARHEADING 70 YEARS OF EXCELLENCE

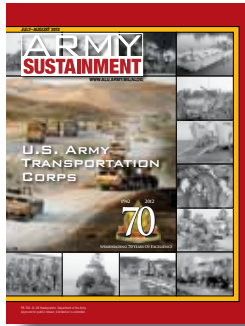


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Cover: On 31 July 2012, the Transportation Corps will celebrate the 70th anniversary of its establishment. To commemorate this milestone, the article on page 3 outlines the corps' way ahead for the future and the article on page 9 reflects on the corps' history. The cover of this issue displays a special 70th anniversary poster that includes a larger photo of current Transportation operations in Afghanistan surrounded by smaller photos of Transportation operations of the past. (Poster by Mark Lee Shanks, Army Transportation Museum)



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June 26, 2012

Dear *Army Sustainment* Readers:

Our Nation and the Army are engaged in an unprecedented decade long combat operation. It is the longest war in our history. We are now entering a new era characterized by the transition of operations in Iraq, and the planned reduction of forces in Afghanistan while facing global economic challenges. This new era will challenge us to develop bold, agile, adaptive, and innovative ways to ensure that our sustainment capabilities are organized, arrayed, trained, and equipped to sustain the decisive edge and achieve Army 2020 goals. We have a small window of opportunity to capture the experiences our great Army gained throughout this past decade. CASCOC will lead this effort for the Sustainment Community.

It is more important than ever that CASCOC remain abreast of the issues that concern our commanders in the field in order to meet their emerging requirements and sustain the Force. I encourage each of you to reach out to the CASCOC staff with your insights, so that we can ensure we train and educate our Soldier's while building the right mix of Sustainment capabilities for our formations to support the Joint Force. You, along with leaders at all levels from squad leader through field grade officer, have the knowledge and experience necessary to help us advance and adapt. You are the future of the Sustainment Community.

As commander of the United States Army Combined Arms Support Command and Sustainment Center of Excellence, I have assumed the privilege of serving as Chairman of the Board of Directors for *Army Sustainment*. In this role, I encourage all of my fellow logisticians to support *Army Sustainment*, our pre-eminent professional journal.

I challenge you to not only read *Army Sustainment*, but I also urge you to submit your ideas, thoughts, or suggestions for how we can do things better. This new era compels us to pull together as a team to keep us the best Army in the world. As Leaders in the Logistics Sustainment Community, it is imperative that we challenge ourselves and educate our subordinates on the value and importance of contributing to *Army Sustainment*.

Additional information, as well as back issues of *Army Sustainment* can be found at www.alu.army.mil/alog.

Larry Wyche
LARRY WYCHE
Major General, U.S. Army
Commanding

The Transportation Corps Strategic Blueprint: Charting the Path of Change for the Corps After Next

BY BRIGADIER GENERAL STEPHEN E. FARMEN

Change is constant, and embracing change starts here! The Army is transitioning, and we must understand the Army's vision and operating concept for the next 5 to 10 to 15 years and ensure that we are prepared to support it. This begins with a systemic professional dialog and constant assessment so that when we "entrust" the continual adaptation and transformation of the Transportation Corps to the leaders of today and tomorrow, it perseveres.

Change is clearly a core competency for us, and the clock of change is turning fast. Yet, based on what I've seen to date and the talented professionals we have on our team, we have every reason to look forward with strength, confidence, and optimism!

This bodes well for us, because in times of great challenges, change, and turmoil come great opportunities, and that is what I see before us now. Although we are in a period defined by tough budget constraints and force cuts, we cannot allow the current climate to dampen our spirits or, more importantly, restrict our creativity and imagination. Now, more than ever, we need to out-think our challenges and use this time to start envisioning the future and, in some cases, reinvent, modernize, and transform ourselves to help shape that future.

Logistics is about movement and velocity, and distribution is an operational process of synchronizing all ele-

This article is adapted from the recently published "United States Army Transportation Corps Strategic Blueprint." Developed by the Chief of Transportation and approved by the commanding general of the Sustainment Center of Excellence, the Transportation Corps Strategic Blueprint provides a vision of how the Transportation Corps can engage with its mission partners to achieve and enable operational objectives, as well as those tasks directed by the Army and the Army Training and Doctrine Command for the next decade.

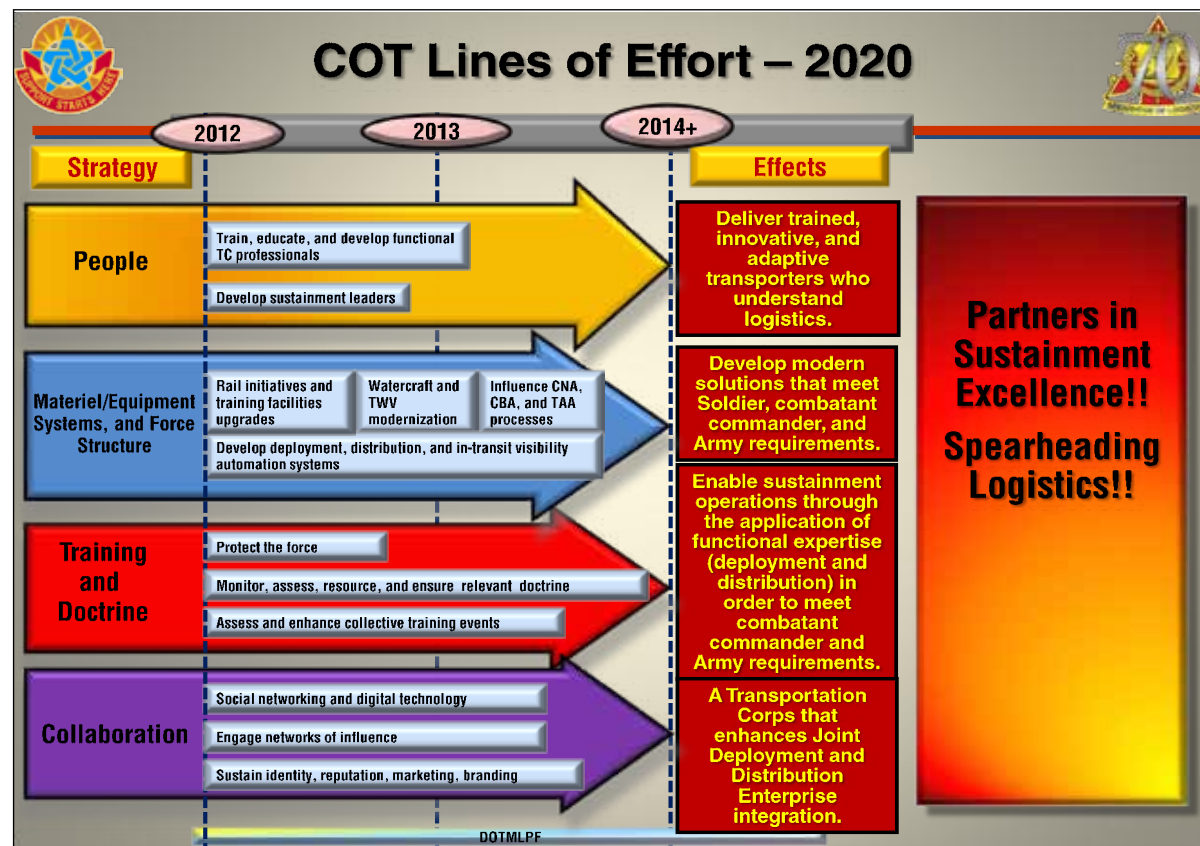
Readers can obtain more complete information on the Strategic Blueprint and actively engage in the dialog that will support the corps' forward momentum at the following websites:

facebook.com/pages/Chief-of-Transportation/
facebook.com/pages/Office-of-the-Chief-of-Transportation/
transchool.army.mil/

—The Chief of Transportation
United States Army Transportation Corps

ments of the logistics system to deliver the right things to the right place at the right time. It can only be achieved if enterprise services for sustaining the force are integrated and expanded under a single network and linked in a way that delivers, governs, and tracks materiel and people and provides proper visibility and information.

Effective distribution means knowing how to connect the dots. As we develop future transportation and movement capabilities, personnel, and doctrine to support contingencies, we are uniquely suited to enhance and integrate sustainment activities in the process and to enable the operational environment with improved flexibility, transparent support, and a connected network of sustainment.



COT's Focus Areas/Priorities

1942-2012: Spearheading 70 Years of Excellence!

- Proponent Optimization (DA Pamphlet 600–3, DA Pamphlet 600–25, Recruiting)
- TAA 14–18 + 4 Cycles out...
- Distribution White Paper (Beyond Operation Enduring Freedom)
- Army Watercraft Strategy for the 21st Century (Mission Command/Fleet Management/Modernization)
- Army Expeditionary Intermodal Operations
- TWV Strategy and JLTV
- TC Force Balance/Mix—TC Over-Modularization/Alignment?
- Distribution Enablers Study
- Global Combat Support System—Army TC Integration
- Rail FDU
- Army Learning Model 2015
- Movement Control (Doctrine/Operational Design)
- One Army School System (OASS) Implementation
- Master Driver Course/Additional Skill Identifier
- Rapid Expeditionary Deployment Initiative
- Branding/Marketing/Outreach/Roots/Regimental Affiliation/Profession of Arms

COT's LOEs

- People
- Materiel/Equip Systems and Force Structure
- Training and Doctrine
- Collaboration

*** Be Entrepreneurs and Collaborate Broadly ***

Gentlemen, we have run out of money. Now we have to think. —Winston Churchill

Legend

ARFORGEN	= Army Force Generation
ASI	= Additional skill identifier
ATTP	= Army tactics, techniques, and procedures
AWS	= Army watercraft systems
CBA	= Capabilities-based assessment
CNA	= Capability needs analysis
COT	= Chief of Transportation
CROP	= Containerized roll-in/out platform
CTO	= Corps transportation officer
DA	= Department of the Army
DTO	= Division transportation officer
FDU	= Force design update
FM	= Field manual
GCSS-A	= Global Combat Support System—Army
HMMWV	= High-mobility multipurpose wheeled vehicle
ITO	= Installation transportation office
ITV	= In-transit visibility
JHSV	= Joint high-speed vessel
JLOTS	= Joint logistics over-the-shore
JLTV	= Joint light tactical vehicle
LOE	= Line of effort
MTS	= Movement Tracking System
OSD	= Office of the Secretary of Defense
PLS	= Palletized load system
RFID	= Radio frequency identification
SAT	= Satellite
TAA	= Total Army Analysis
TC	= Transportation Corps
TC-AIMS	= Transportation Coordinators'—Automated Information for Movements System II
TSP	= Training support package
TWV	= Tactical wheeled vehicle
UMO	= Unit movement officer

Transportation Corps Vision

Our Transportation Corps Vision is:

To be a bastion of transportation innovation, adaptive training, and expertise producing people and materiel that permeate all facets of military logistics and operations with relevant vigor and spearheads logistics into the future = ***Integrators of Deployment and Distribution.***

We are partners in Sustainment Excellence—the Spearhead of Logistics!!—A Transportation Corps transformed into an agile, adaptive institution that serves as an integrator of deployment and distribution functions within the Sustainment Warfighting Function (SWfF) in support of combatant commanders and other Army requirements. We work effectively with other mission partners and are strategically responsive and reliable, delivering certainty and trust across all spectrums of operations at all levels of war.

To achieve this vision, establishing collaborative partnerships within well developed *networks of influence* between

the Transportation Corps and our mission partners will be key. Our vision requires an inclusive and integrated strategic blueprint.

The first edition (2.0) of the Transportation Corps Strategic Blueprint is the long-term outlook for the corps through 2020 and aligns with the Army Capstone Concept and the Functional Concept for Sustainment. This blueprint is organized to be evolving across lines of effort that intersect with the Army Enterprise Infrastructure and the factors of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF). Our blueprint will be promulgated using the assess, dialog, and transform construct: Think—envision—shape—set conditions—integrate—repeat.

The Chief of Transportation's Intent

As the Chief of Transportation (COT), my intent is to connect, integrate, and deliver the transportation capabilities and capacity for movement and distribution excellence on all fronts and at all levels and to produce transporter-logisticians who are functional experts and savvy supply chain integrators. The intent is to—

- ❑ Breed transporter-logisticians of character. They will have an imaginative and entrepreneurial spirit. They will be pioneers (pioneering the “art of the possible”). They will be inquisitive and curious while maintaining honor, integrity, and readiness. They will be integrators, warriors, diplomats, and team players. They will have the right attitude, emphasizing mindsets over skill sets.
 - ❑ Deliver trained, innovative, adaptive, and professional transporters who understand logistics.
 - ❑ Develop modern solutions that meet Soldier, combatant commander, and Army requirements.
 - ❑ Enable sustainment operations through the application of functional expertise (in deployment and distribution) in order to meet combatant commander and Army requirements.
 - ❑ Assist the Army and the joint, interagency, intergovernmental, and multinational (JIIM) community, along with our mission partners, to have an integrated movement and distribution network enabled by an interdependent Transportation Corps.
- Our goal is for this to be an adaptive blueprint providing a roadmap to:
- ❑ Develop leaders and develop the individual as a leader.
 - ❑ Enable deployment and distribution.
 - ❑ Connect the dots while executing decentralized operations.
 - ❑ Do it jointly in a JIIM context.

This blueprint provides a strategic vision of how we can engage with our mission partners to achieve not only our objectives but also the objectives and tasks directed by the Army Training and Doctrine Command (TRADOC) toward 2020. We will remain the Spearhead of Logistics (Distribution) by air, land, sea, and rail for the Army and the Joint Force through active collaboration with our mis-

Spearhead The Future

You.

You are the future of the Transportation Corps.

You will deploy.

You will distribute and be the recipient of distribution.

We are Professionals (Military and Civilian).

You are a Transporter, a Logistician . . . A Warfighter supporting Warfighting.

You will make history and be part of a long legacy and heritage of excellence.

Someone is counting on you to move, to deliver, to be at the spearhead of change—to know how to connect the dots and integrate the action in the new normal.

We are a Team: A Bastion of Innovative, Adaptive Expertise.

Have the courage and the vision to move the force forward. The Corps is counting on you to:

- ☐ Develop leaders and develop as a leader.
- ☐ Enable deployment and distribution.
- ☐ Connect the dots while executing decentralized operations.
- ☐ Do it jointly in a JIIM context.
- ☐ Remember: Logistics is about movement, motion, velocity, and
- ☐ *Nothing Happens Until Something Moves!*

To be an expert transporter, you must understand logistics! Leverage your functional roots to become a relevant enterprise logistician.

Be an ambassador for your Corps and an entrepreneur to grow it into the future . . .

To spearhead is to lead!

The Spearhead of Logistics.

The Transportation Corps Mantra
We are the maneuver element of the Logistics Corps!
 The Transportation Corps enables movement, deployment,

Developing junior leaders with the skills to critically think and develop the situation at the lowest levels is our charge. We will do this in two ways: first, by establish-

Distribution and sustainment are cornerstones for the Sustainment Center of Excellence, and distribution is the cornerstone of the Transportation Corps. Essentially, distribution and sustainment are synonymous. The Transportation Corps, with our mission partners, will strive to produce the people and materiel that enable an integrated deployment and distribution network. This will involve conducting systemic and systematic assessments to expose

Do It Jointly in a JIIM context. Joint Vision 2020 specifies transportation as the key to improving deployment,

We need the capabilities to rapidly deploy and distribute forces, equipment, and materiel to Army and Joint Forces operating across the full spectrum of operations anytime, anywhere in support of the National Military Strategy and in coordination with our mission partners. To achieve these capabilities, we must transform into an agile, adaptive institution that serves as the main effort and key integrator for the Army's development of a unified distribution network operating in a JIIM environment. By leveraging business intelligence, digital technology, and social-networking tools in all we do, the Transportation Corps will work with our mission partners at CASCOT, across our Army, and across the joint formation. We are inherently a joint operation—nothing happens until something moves!

page 4, top), the COT Focus Areas shown in the chart on page 4, bottom, make up our main thrusts of activity. Many initiatives are embedded as sub-bullets to these broad focus areas. The chart on page 7 amplifies those initiatives that are either completed or significantly in motion over the past year. All told, this is a participatory world we live in. We need your engagement and participation to help us shape it.



www.discoveringdistribution.org

70 Years of the Transportation Corps

On 31 July 1942, the Department of War recognized the need for a single manager of Army transportation and created a new branch, the Transportation Corps. Since the Revolutionary War, Army transportation had evolved through two branches, the Quartermaster Corps and the Corps of Engineers. The demands of World War I made the Army first realize its need for a single manager for military transportation. So began an evolution over the next quarter century that culminated in the birth of the Transportation Corps during the opening months of World War II.

Transportation as a function has existed from the beginning of American military history. The Quartermaster Department was long responsible for wagon and boat transportation, except for harborcraft; responsibility for harborcraft resided with the Corps of Engineers since it had the mission of maintaining ports. When the Army adopted the use of military railroads during the Civil War, that function also fell to the Corps of Engineers since it was responsible for repairing tracks and building bridges.

During the 19th century, the Army was too small to require much specialization. So transportation requirements during peacetime could be managed by the Quartermaster Department. During war, however, the need for military transportation habitually expanded into organizations that managed the different modes, such as wagons, boats, and railroads. [The Quartermaster, Subsistence, and Pay Departments were consolidated in 1912 to create the Quartermaster Corps.]

Evolving Organization for Transportation

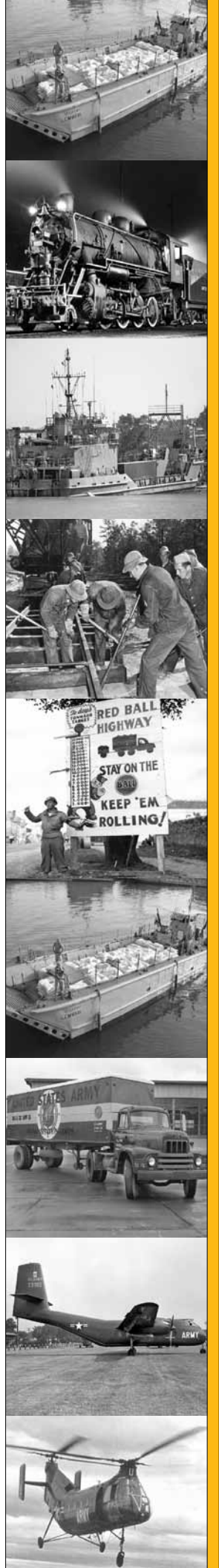
Starting with the invasion of Cuba in 1898, all subsequent wars of the United States were fought overseas. The debacle of unloading V Corps at Tampa, Florida, and offloading men, animals, and supplies at Daiquiri and Siboney, Cuba, taught the Army that it could not afford failure at ports and that it needed professionals who knew how to manage ports of embarkation and debarkation, deliver supplies over bare beaches, and manage the Army's seagoing fleet of transports.

As a result, the War Department created the Army Transportation Service (ATS) under the Quartermaster Department on 18 August 1899. The ATS became the

genesis of the future Transportation Corps and would evolve through a number of organizational name changes to become the current Military Surface Deployment and Distribution Command (SDDC).

On 11 July 1918, the American Expeditionary Forces, by General Orders No. 114, formed the Motor Transport Corps to manage the Army's new fleet of trucks during World War I. So in this war, the Quartermaster Corps managed wheeled vehicles, stevedores, and the Army's deep-water fleet, while the Corps of Engineers had responsibility for railroads and harborcraft.

The Army soon realized that it needed one organization to manage the increasing modes of transportation. On 11 March 1919, the Secretary of War issued General Orders No. 54, creating the Transportation Service by merging the Embarkation Service and the Inland Traffic Service. On 9 April 1919, the Purchase, Storage, and Traffic Division of the General Staff subsequently directed (through Supply Circular No. 28) the consolidation of all transportation activities, except those of the Motor Transport Corps, into the Transportation Service. The Transportation Service, like the Motor Transport Corps, created its own branch insignia as one more step toward functional autonomy. It was becoming evident that



CHIEFS OF TRANSPORTATION

CHIEFS OF TRANSPORTATION IN WASHINGTON, D.C.

- 1. BRIGADIER GENERAL FRANK T. HINES 1919–1922
- 2. MAJOR GENERAL CHARLES P. GROSS JULY 1942–NOVEMBER 1945
- 3. MAJOR GENERAL EDMOND H. LEAVEY DECEMBER 1945–JUNE 1948
- 4. MAJOR GENERAL FRANK A. HEILMAN JULY 1948–MARCH 1953
- 5. MAJOR GENERAL PAUL F. YOUNT APRIL 1953–JANUARY 1958
- 6. MAJOR GENERAL FRANK S. BESSON, JR. MARCH 1958–MARCH 1962
- 7. MAJOR GENERAL RUSH B. LINCOLN, JR. MARCH 1962–JUNE 1963
- 8. MAJOR GENERAL EDWARD W. SAWYER JUNE 1963–JULY 64
- 9. COLONEL RICHARD K. HUSTON AUGUST 1964–SEPTEMBER 1964
- 10. MAJOR GENERAL WILLIAM N. REDLING SEPTEMBER 1964–DECEMBER 1964

CHIEFS OF TRANSPORTATION

- 11. MAJOR GENERAL HAROLD I. SMALL AUGUST 1979–JULY 1983
- 12. MAJOR GENERAL AARON L. LILLEY JULY 1983–AUGUST 1985
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- 19. MAJOR GENERAL WILLIAM E. MORTENSEN JUNE 1999–JULY 2001
- 20. MAJOR GENERAL ROBERT T. DAIL JULY 2001–JULY 2003
- 21. MAJOR GENERAL BRIAN I. GEEHAN JULY 2003–JULY 2005
- 22. BRIGADIER GENERAL MARK E. SHEID JULY 2005–AUGUST 2006
- 23. MAJOR GENERAL JAMES E. CHAMBERS AUGUST 2006–JUNE 2008
- 24. BRIGADIER GENERAL BRIAN R. LAYER JUNE 2008–AUGUST 2010
- 25. BRIGADIER GENERAL EDWARD F. DORMAN AUGUST 2010–APRIL 2011
- 26. BRIGADIER GENERAL STEPHEN E. FARMEN APRIL 2011–PRESENT

¹ There was no Chief of Transportation from 1964 to 1983.
² From August 1983 to August 2010, the Commanding General of the U.S. Army Transportation Center and Fort Eustis also served as the Chief of Transportation.
³ Since October 2010, the Commandant of the U.S. Army Transportation School and Chief of Transportation has been located at Fort Lee, Virginia.

World War II

Following the bombing of the U.S. fleet at Pearl Harbor, Hawaii, on 7 December 1941, the United States entered its largest war ever. To mobilize its vast resources and deploy them simultaneously across the Atlantic and Pacific Oceans created the greatest demands ever on military transportation assets. Consequently, transportation was a critical factor in dictating the Allies’ strategy. The magnitude of transportation demands required functional experts.

This time, there was no hesitation concerning the control of transportation. In March 1942, the Army created a Transportation Division under Colonel (later Major General) Charles P. Gross in the Services of Supply. On 31 July 1942, under the authority of Executive Order 9082, the Army established the Transportation Corps as a separate branch. The new branch acquired the deep-draft fleet, railroads, stevedores, and harborcraft units from the Quarter-

and materiel across bare beaches until the ports were secure.

The military campaign in the Mediterranean theater was focused on securing the deep-draft port of Oran in Algeria and then pushing by rail across North Africa to Tunisia, where combat power could be loaded at the Port of Bizerte for landings in Sicily, Italy, and finally, southern France.

The Army conducted more amphibious operations than the Marine Corps during World War II, and the D-Day landing in Normandy would remain the largest amphibious operation of the war. The Normandy landing sites would sustain three armies until the First Army took the deep-draft port of Cherbourg and rehabilitated it a month later. This became the standard for over-the-beach operations.

However, the success of the Army port units was diminished by the U.S. Air Force’s destruction of railroads leading out of the Cotentin Peninsula. Innovative traffic management solutions, such as the Red Ball and later truck expresses, helped sustain the rapid breakout of the First and Third Armies from Normandy. Transportation assets became the lifeline of the advance into the very heart of Germany.

In the South Pacific, the Transportation Corps created a small ships section to provide General Douglas MacArthur with the amphibious capability to begin taking back the island of New Guinea from the Japanese in the summer of 1942, a full year before the 2d Engineer Special Brigade arrived. Army freight ships and port and harborcraft units of the Transportation Corps sustained the Army from Guadalcanal, through small islands across the South and Central Pacific, and on to Okinawa. The 43d Amphibious Truck Battalion (Transportation Corps) even participated in the Marine landings on Iwo Jima.

During the war, the Transportation Corps moved over 30 million Soldiers in the United States and 7 million overseas, along with 126 million tons of cargo. Not only did the Transportation Corps have to support the Army on several fronts, but it also had to sustain its Allies in their fights, resulting in the two longest lines of communication during World War II: the Persian Corridor in Iran and the Ledo Road through Burma. The Persian Corridor was a 636-mile road and later railroad from Khorramshahr to Kazvin to the Baltic Sea that was used to supply Russia in its fight against Germany. The Ledo Road extended over 1,079 miles from Assam, India, through mountains and jungle to Kunming, China, to provide a lifeline to the Nationalist Chinese fighting against the Japanese.

The two greatest military powers on the earth at that time, Japan and Germany, marveled at the speed and volume with which the United States could produce, mobilize, and project its power around the globe. America’s enemies were literally overwhelmed by mili-



Above, in July 1950—only a month after the North Korean invasion of South Korea—an Ordnance unit forms a convoy after unloading equipment from railroad flatcars that brought them from Pusan. Below, Soldiers unload artillery shells from a railroad boxcar in Germany during World War II.



the increasing size of the Army and the diverse modes of transportation would require the specialization of a separate branch to manage this function.

In 1919, the future Transportation Corps was off to a good start when the Secretary of War appointed Brigadier General Frank T. Hines as the first Chief of Transportation. He advocated the need for centralized control of all transportation matters in the War Department. The National Defense Act of 4 June 1920 placed all military transportation except rail under the Army Transportation Service as a separate service of the Quartermaster General, effective on 15 July 1920.

Congress, however, mandated a reduction of the military that same year. As a result, the Transportation Service was reduced to a Transportation Division in the Office of the Quartermaster General. Hines continued to serve as the Chief of Transportation until 1922.

master and Engineer Corps.

The Quartermaster Corps retained trucks and the newly created amphibious truck units, and the Engineers retained the assault landing craft in the engineer special brigades to conduct the Army’s amphibious landings. The Transportation Corps was created out of the lessons of World War I, primarily to manage traffic, or movement, control. It only received responsibility for those modes of transportation that the other two branches did not want.

During the war, the Transportation Corps was responsible for moving Soldiers from their training bases to the front and managing the ports of embarkation and debarkation in between. Because the Axis Powers knew the importance of denying the Allies the use of deep-draft ports, the Transportation Corps had to rely on landing craft and amphibious vehicles to deliver men



During World War II, the Transportation Corps had to rely on landing craft and amphibians to deliver men and materiel across bare beaches until the ports were secure. This landing craft comes ashore at Anzio beach in Italy in May 1944.

southern tip of the Korean peninsula by the surging North Koreans. The deep-draft port of Pusan provided the critical link in the lifeline of men and materiel shipped from Japan. The Far East Command quickly established the Pusan Base Command, and the 8057th Provisional Port Company began operations immediately, discharging 309,000 tons of cargo in July 1950.

Later that year, the 7th Transportation Major Port (later redesignated the 7th Transportation Group) assumed control of Pusan and discharged over a million tons of cargo a month. By the end of 1952, the 7th Port celebrated its movement of 10 million tons of cargo through Pusan.

tary might transported from the factory to the foxhole courtesy of the Transportation Corps.

Post-War Developments

Riding on this success, the War Department directed the Quartermaster Corps to transfer the functions and responsibilities of truck and aviation units to the Transportation Corps by General Orders No. 77 on 24 July 1946. The same year, the Transportation School consolidated all training, except for drivers, at Fort Eustis, Virginia, because of its intermodal rail and sea capability. In 1950, the Army turned over its deep-draft ships to the Military Sealift Command, so the Army no longer had the largest navy in the United States military.

That same year, Brigadier General William B. Bunker convinced the Chief of Transportation, Major General Frank S. Besson, Jr., of the importance of helicopters in logistics. As a result, in May the Army approved the organization of five helicopter companies with the first, the 6th Transportation Company (Helicopter), activated in July 1952.

Meanwhile, the Soviet Union had established control over Eastern Europe behind the Iron Curtain and detonated its first atomic bomb in 1949, and Communists had seized power in China. The first military showdown of the resulting Cold War between the Communists and the free world began when the Communists of North Korea invaded South Korea on 25 June 1950.

Korean War

The first objective of the American intervention in the Korean War was to stabilize the Pusan Perimeter, where retreating U.S. forces had been trapped at the

DeLong floating piers like this one at Cam Rahn Bay made the development of deep-draft ports in South Vietnam possible.

By the time hostilities ended on 27 July 1953, the Port of Pusan had discharged three times the cargo of all the other Korean ports combined.

The Transportation Corps likewise supported the breakouts from the ports of Inchon and Wonsan that drove the North Koreans all the way back across the Chinese border. The subsequent Chinese intervention cut off United Nations forces, requiring the trucks of the 52d and 55th Transportation Battalions to rescue the 1st Marine Division and the 2d Infantry Division by fighting through gauntlets of enemy ambushes. This action resulted in the branch's first Medal of Honor winner, Lieutenant Colonel John U.D. Page.



Cold War Growth

In 1954, the Engineer Corps turned its landing craft over to the Transportation Corps, making the Transportation Corps responsible for all modes of Army transportation. Coincidentally, the Navy lifted the size limit on Army watercraft, allowing the Army to build landing craft utility (LCUs). This led the Transportation Corps to activate the 159th Boat Battalion.

The Soviet threat against Europe provided the peacetime Army an enemy to plan against. In anticipation of the needs of the Army, the Chief of Transportation directed and championed the development of military transportation. Contingency planners assumed the worst-case scenario, in which the Soviet Union would use its bombers or, worse yet, its nuclear arsenal to destroy the fixed ports in France, thus severing the vital lines of communication at their European end. This contingency required the Army to rely heavily on over-the-beach operations.

The Transportation Corps began an annual New Off-shore Discharge Exercise (NODEX), which was held from 1954 until French President Charles de Gaulle ordered the U.S. Army out of his country in 1964. The name of this type of operation was changed to supply-over-the-beach until Soldiers started referring to it by its acronym, the SOB. These operations then became known as logistics-over-the-shore (LOTS).

Because 90 percent of the world's beaches had too shallow a gradient for Army landing craft to drop

In France in 1958, a commercial trailer is lowered into the hold of the USNS Comet because the trailer is too big to enter by ramp.



One of the first American-made locomotives to reach France is swung from the Seatrain Texas by the crane ship Lapland and lowered to the rails on the Quai de Homet in Cherbourg, France, in August 1944.

ramps on dry beach, the Transportation Corps at the direction of General Besson invested in a fleet of lighter amphibious resupply cargo (LARC) vessels with 5-, 15-, and 60-ton capacities. Besson would rise to become the Transportation Corps' first four-star general. The investment in amphibians and watercraft paid big dividends in the next war.

Vietnam War

The Vietnam War began as an adviser war, with Transportation Corps helicopter companies arriving as the first intact units as early as December 1961. When the U.S. Army assumed a greater ground role in the war in the summer of 1965, Transportation units were among the first to deploy to Vietnam in order to bring in the massive buildup in troops.

To take the pressure off South Vietnam's one commercial port at Saigon while also shortening the ground lines of communication, the Transportation Corps built several subports at Qui Nhon, Cam Rahn Bay, and Newport, along with numerous LOTS sites along the coast. Because of the long coastline of the country and its well-developed system of canals and rivers, Army watercraft delivered the vast majority of cargo. To provide self-protection against the threat of convoy ambushes, the truck companies built gun trucks. With truckdrivers fighting the war, the Transportation Corps earned two more Medals of Honor, which were awarded to Specialist 4 Larry Dahl and Sergeant William Seay.

The first step toward the separation of aviation from the Transportation Corps came in 1965 with the creation of combat aviation units. During the war, the Transportation Corps retained aviation maintenance units until Aviation became its own branch in 1983.

Post-Vietnam Developments

In the aftermath of the Vietnam War, the Army refocused on holding back a possible Soviet attack through the Fulda Gap in Germany. However, the joint invasion of the tiny Caribbean island of Grenada in 1983 required the Armed Forces to revamp their doctrine and organization. One lesson learned was the need for a single manager of strategic transportation. In response, the U.S. Transportation Command was created in 1987 to provide command and control for the Military Traffic Management Command (MTMC—later SDDC), the Military Sealift Command, and the Air Mobility Command.

At the same time, the Transportation Corps orga-



U.S. and Korean stevedores load lumber recently brought in by ship onto Army railcars in South Korea.

Locomotives and railcars are parked at a railyard in Wales in March 1944 in preparation for being shipped to the European mainland after the D-Day invasion of France.



Following the first Gulf War, the 7th Transportation Group opened ports in Somalia in 1992 and Haiti in 1994, and the 37th Transportation Group moved and sustained combat troops in Bosnia in 1995 and Kosovo in 1999. Transporters also supported disaster and humanitarian relief operations around the globe.

With the start of the Global War on Terrorism in 2001, the Transportation Corps operated the airports of debarkation in Afghanistan and the Horn of Africa. But the size of the ground invasion of Iraq that began in March 2003 required the 7th Transportation Group and the 1st TMCA to open the seaports and airports in Kuwait. After the quick fall of Baghdad, truckdrivers once again became combat Soldiers and revived the gun truck concept abandoned after the Vietnam War to provide their own security along an 800-mile supply line.

Transformation

While the war in Iraq clearly demonstrated the need for a transportation group headquarters to manage up to four transportation battalions clearing the ports and pushing materiel out of Kuwait, the Army underwent a transformation into a smaller, leaner, and more modular force. The brigade combat team became the focus of the new structure instead of divisions, and echelons-above-corps logistics organizations were replaced by

multifunctional sustainment brigades. This began to reverse the progress made since World War II.

In 2004, MTMC became the multifunctional SDDC. In 2007, SDDC became responsible for end-to-end deployments and created deployment and distribution support teams in Bagram, Afghanistan, and Camp Anaconda in Balad, Iraq. SDDC began to look beyond the sea ports of embarkation.

The BRAC (base closure and realignment) 2005 decisions combined related Army schools. This resulted in moving part of the Transportation School to Fort Lee, Virginia, to join the Quartermaster and Ordnance Schools in 2010; this divided the school, with part remaining at Fort Eustis.

Upon returning from its second deployment to Kuwait, the 7th Transportation Group reorganized into a sustainment brigade. The Army thus lost its only theater port-opening brigade-level headquarters—the

effect of which became evident in 2010 when the XVIII Airborne Corps had to conduct disaster relief operations after the earthquake in Haiti. SDDC was ready to step up to the challenge, racing the 7th Sustainment Brigade to see which organization could

REGIMENTAL CHIEF WARRANT OFFICERS

- | | |
|--|----------------------|
| 1. CHIEF WARRANT OFFICER 5 CHESTER L. WILLIAMS | JULY 2004–JULY 2007 |
| 2. CHIEF WARRANT OFFICER 5 MICHAEL L. KEITH | JULY 2007–APRIL 2011 |
| 3. CHIEF WARRANT OFFICER 5 THOMAS J. WILSON | APRIL 2011–PRESENT |

nized movement control battalions and transportation movement control agencies (TMCAs) to manage movements at the theater level. In another milestone, the Transportation Corps was inducted into the U.S. Army Regimental System on 31 July 1986.

During the invasion of Panama in 1989, the Transportation Corps operated the two airports vital to the flow of units into that theater. From that conflict

Corps) since World War II in response to the Iraqi invasion of Kuwait. The 7th and 32d Transportation Groups played a critical role in opening up the seaports and building up sufficient forces and mountains of supplies in Saudi Arabia in time to stem any further Iraqi aggression. They then secretly moved the XVIII Airborne Corps laterally to the border of Iraq while still delivering supplies for the drive into Kuwait and Iraq.

onward, the Transportation Corps would have to open and operate ports in many contingencies.

Global Deployments

In 1990, the Army conducted the largest deployment (Third Army, VII Corps, and XVIII Airborne

REGIMENTAL COMMAND SERGEANTS MAJOR

- | | |
|---|----------------------------|
| 1. COMMAND SERGEANT MAJOR JOHN UPCHURCH | JULY 1986–MARCH 1987 |
| 2. COMMAND SERGEANT MAJOR D.L. “DENNY” GAINES | MARCH 1987–APRIL 1990 |
| 3. COMMAND SERGEANT MAJOR LARRY H. ORVIS | APRIL 1990–AUGUST 1992 |
| 4. COMMAND SERGEANT MAJOR JOHN C. DANIELS | AUGUST 1992–JULY 1994 |
| 5. COMMAND SERGEANT MAJOR HOWARD V. RATHMAN | JULY 1994–AUGUST 1996 |
| 6. COMMAND SERGEANT MAJOR DONALD H. SHEPPARD | AUGUST 1996–OCTOBER 1999 |
| 7. COMMAND SERGEANT MAJOR STEPHEN P. RASCHKE, SR. | OCTOBER 1999–JULY 2002 |
| 8. COMMAND SERGEANT MAJOR SAMUEL I. LYONS | JULY 2002–JANUARY 2005 |
| 9. COMMAND SERGEANT MAJOR C.C. JENKINS, JR. | JANUARY 2005–DECEMBER 2008 |
| 10. COMMAND SERGEANT MAJOR DWAYNE B. PERRY | DECEMBER 2008–MARCH 2012 |
| 11. COMMAND SERGEANT MAJOR ALLEN B. OFFORD | MARCH 2012–PRESENT |



Trucks of the 6th Transportation Battalion line up at Camp Arifjan, Kuwait, during Operation Iraqi Freedom. (Photo by Ian Jones)

In a period of competing resources, the Army desperately held on to brigade combat teams at the expense of logistics units. With the recent Total Army Analysis Review, all table of organization and equipment transportation battalion headquarters are slated for inactivation except for two terminal battalions (which provide the Army's remaining JLOTS capability) and five movement control battalions. The Army has given up all of its truck battalion headquarters—a capability that each war demonstrates is greatly needed.

The Transportation Corps' primary function is becoming movement control, which it was created to perform during World War II. SDDC will have responsibility for sea ports of debarkation and embarkation, JLOTS, and Army watercraft, as did its predecessor, the ATS, after it was created in 1899. The loss of functional Transportation Corps companies creates a greater reliance on civilian contractors and results in slowly civilianizing the logistics function, which was militarized in 1912.

The Army has always had a need for military transportation but has managed it in different ways. The lessons of history have taught the need for functional experts and singular management. But as military resources decline, these functional experts will need to be more innovative

in how they accomplish future missions.

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arrive in Haiti first and conduct the JLOTS operation. SDDC's 832d Transportation Battalion beat the 7th Sustainment Brigade's Fort Eustis-based 10th Transportation Battalion, but only because the former had a shorter sailing distance from Florida.

The next year, the Army offered SDDC's parent organization responsibility for JLOTS and Army watercraft—the very same responsibility the ATS had before World War II. The Haiti experience also made the Army recognize the need for a brigade with a theater port-opening capability (essentially the old 7th Transportation Group). However, with the reduction of functional transportation units, the Army was turning back the clock.

Synchronizing Field and Sustainment Support: Roles and Responsibilities After 10 Years of War

BY COLONEL TODD A. HEUSSNER, LIEUTENANT COLONEL GEOFFREY C. DE TINGO, AND LIEUTENANT COLONEL CRAIG M. SHORT

In February, most of the Army's Active component sustainment brigade commanders met under the mentorship of former sustainment brigade commanders and logistics general officers to discuss field-level sustainment functions and capabilities, leverage lessons learned from the previous 8 years of sustainment brigade operations, and make recommendations for the future to the greater sustainment community.

This opportunity to review and refine sustainment doctrine was a collaborative effort of leaders with extensive experience in both the generating and operating forces. The introspection brought to light a number of challenges on the path ahead but, most importantly, set the conditions for an indepth discussion of structures, roles, responsibilities, authorities, funding, materiel management, and support operations.

The general consensus of those attending the conference was that sustainment brigades were developed in theory, put into action, and proved to be highly successful operating within the initial doctrinal limits. The Army's task now is to capitalize on the lessons learned during the past 10 years and fully assess sustainment brigade doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) in order to truly support future unified land operations.

Simplifying field-level sustainment through a single organizational construct that collects requirements and either satisfies them or coordinates for the needed resources and solutions across the sustainment spectrum is the next progressive step in our evolution. Leveraging sustainment brigade and Army field support brigade (AFSB) relationships to meet supported commanders' requirements must be documented and developed as doctrine. Further, the roles, responsibilities, processes, and functions must be realigned to ensure that sustainment optimization occurs.

Transformation Challenges

The Army's sustainment community transformed very quickly in response to a rapidly changing operational environment. The Army of Excellence (AOE) sustainment community had to transform from a structure of corps support commands, corps support groups (CSGs), division support commands (DISCOMs), and main and forward support battalions into a structure of enterprise-focused sustainment commands, distribution-centric sustainment

brigades, and robust brigade support battalions (BSBs). The transformation included modularization to allow us to send only the elements that are needed for a specific mission rather than entire organizations, thus achieving tailorable logistics.

Eight years after transforming, the sustainment community continues to provide unparalleled support to the warfighter. However, echeloned support from the sustainment brigade to the theater sustainment command (TSC) and related doctrine have created both intended and unintended consequences. There is confusion as to who is the "single face of logistics," especially at echelons above brigade (EAB), and which unit performs what specific sustainment functions. Acknowledging in doctrine that the sustainment brigade is the "single face of logistics to the warfighter" and echelons above division (EAD) enabling units will set clear conditions for mission, function, and responsibility.

The intent of transformation and modularization was to gain efficiencies by streamlining sustainment structure and operations from the tactical to the strategic levels of operations. The reality is that sustainment transformed into two parallel lines of operational support. The BSBs, sustainment brigades, expeditionary sustainment commands, and TSCs form an operational line that runs parallel to the enterprise line conducted under the umbrella of the Army Materiel Command (which includes the life-cycle management commands, the Army Sustainment Command, and the AFSBs).

The function of the operational line is to manage sustainment and distribution from the theater entry point to the brigade combat team (BCT) and EAD units. The function of the enterprise line is to manage acquisition logistics and technology from the tactical through the strategic level. The two lines only meet at the strategic level; they do not meet at the point of need. But the opportunity exists to meet structurally or doctrinally at the field level of logistics.

Proposed Changes

What follows are some proposed sustainment brigade theoretical and doctrinal changes. These proposals are based on the conclusions of the February conference of sustainment leaders. (See chart on page 20.) At times, the proposed changes reach back to AOE doctrine in order to

illustrate, clarify, or translate concepts for recommended changes into current doctrine. This is because AOE sustainment offers context and benchmarks where gaps and friction points resulted from transformation.

Synchronizer of Sustainment

Army doctrine should recognize that the sustainment brigade is the single entry point and the sustainment brigade commander is the lead integrator and synchronizer of sustainment at the field level of logistics both for the division and EAD units.

Eight years of overseas contingency and installation operations have demonstrated that the sustainment brigade, like the AOE DISCOM and CSG, is the organization that planners and operators look to for successful BCT and EAD unit support. All brigade and division commanders look to the sustainment brigade commander as the one stop for EAB and EAD support integration.

A sustainment brigade commander provides sustainment mentorship of his logistics units’ sustainment oversight and support operations management as well as mentorship to all sustainers across his area of responsibility (AOR). The sustainment brigade is resourced to accomplish these functions. At the field level of logistics, the sustainment brigade is generally the lead synchronizer and senior sustainment adviser across the division and installation.

The sustainment brigade commander synchronizes combat sustainment support battalion (CSSB) operations in support of EAD operations and BSB operations in support of the BCT and coordinates with the division G–4 to recommend plans, policies, and procedures to the division commander. The sustainment brigade commander synchronizes with the Army field support battalion (AFSBn) commander and with the installation director of logistics to coordinate sustainment-level enterprise support.

Sustainment Operations Center

Army doctrine should recognize that the sustainment brigade’s sustainment operations center (SOC), like each installation’s logistics support plan, is the place where support gaps are identified and a synchronized sustainment plan is developed for the division and the installation within the field level of logistics.

In the AOE Army, doctrine recognized that the DISCOM and CSG commanders synchronized sustainment through the materiel management centers (MMCs) in the division and corps support areas. The sustainment brigade SOC, where established, is accomplishing these functions now. The SOC is the nexus where the two parallel lines of sustainment—operational and enterprise—can meet within the field level of sustainment. It is the one place where the BCT warfighter and other EAB units can actually engage the single face of sustainment.

The SOC takes all the expertise and depth that reside in the sustainment brigade and synchronizes those functions

SUSTAINMENT COMMUNITY
LEADERS CONFERENCE
CONCLUSIONS

In February, a group of current and slated sustainment brigade commanders met under the mentorship of former sustainment brigade commanders, logistics general officers, and others offering a cross-section of Army sustainment experience to compare theory, practice, and doctrine over the 8 years of sustainment brigade operations in Iraq, Afghanistan, and garrison environments. At the conclusion of their February conference, the current and slated sustainment brigade commanders and logistics general officers arrived at several conclusions regarding sustainment brigade doctrine, organization, training, materiel, and leader development:

1. Recognize in doctrine that the sustainment brigade is the principle sustainment integrator to the tactical warfighter (brigade support battalions, brigade combat teams, division, and other echelons-above-brigade units) for the field level of logistics.
2. Recognize in doctrine that the sustainment brigade sustainment operations center (SOC) is the single entry point for sustainment integration.
3. Recognize in doctrine that the Army field support battalion (AFSBn) collocates within the SOC, where possible, to ensure that there is a “single face” for warfighter support.
4. Recognize in doctrine that the AFSBn assumes mission command of garrison SOC operations when the sustainment brigade deploys.
5. Recognize in doctrine that the sustainment brigade functions as the sustainment and distribution manager for the locally supported field level of logistics.
6. Align regional areas of responsibility in the continental United States so that both the sustainment brigade and its colocated AFSBn support the same warfighters.
7. Align each supported division with its habitual sustainment brigade, combat sustainment support battalion and numbered sustainment companies for training centers and deployment.
8. Train to rapidly deploy with theater-opening capabilities within 18 hours.

with representatives of the installation support team, the sustainment-level support team, and the division G–4 to provide that single stop for the BCTs, EAB tenant units, and other units transiting the AOR that require support and the enterprise sustainers who want to support them.

The SOC in effect lowers the walls and enables a fusion of communication and coordination within the field level of logistics.

The doctrine that governed the sustainment of the AOE Army was clearly understood. The BCT’s administration and logistics operations center (ALOC) and the division rear were where sustainment synchronization occurred and the warfighter worked on logistics issues. The SOC is even more efficient and streamlined than the AOE division rear because only one sustainment brigade synchronizes sustainment for all units within a division’s operating environment as opposed to a DISCOM and CSG (forward) synchronizing sustainment for divisional and corps units, respectively. This single mission command is more effective and efficient and supports the intent of reducing logistics fratricide and excess. This advantage will become increasingly important as budgets shrink.

AFSBn and SOC Colocation

Army doctrine should recognize that the AFSBn and sustainment brigade should colocate within the SOC to ensure that sustainment is synchronized at one location within the field level of logistics.

With operations over in Iraq and transitioning to security force advisory operations in Afghanistan, the time is right to set conditions for the force. Army Force Generation (ARFORGEN) is a tested process, but it will be redefined by operational realities and fiscal constraints. We can mitigate fiscal constraints while improving better daily support to our teammates and still be prepared to surge if needed by collocating AFSBn and sustainment brigade operations.

Like doctrinal recognition that the SOC is the one place where sustainment synchronization occurs, collocation of the AFSBn within the SOC requires no changes to command relationships. Efficiency is gained through proximity, fusion, and purpose; a unified sustainment front is achieved at no cost to senior commanders.

With sustainment-level and field-level teams connected, each sustainment commander can leverage his organization’s capabilities for maximum support. The AFSBn can leverage the sustainment brigade’s depth of expertise, capabilities, and established relationships with supported units to help locally manage the ARFORGEN process. The AFSBn–sustainment brigade relationship provides a more comprehensive and more responsive logistics common operating picture installation wide during both garrison and wartime operations. The power of both organizations can be brought to bear in order to ensure that absolute clarity and unity of effort is achieved when managing the Army Forces Command (FORSCOM) Army reset common operating picture.

AFSBn Role During Brigade Deployment

Army doctrine should recognize that when the sustainment brigade deploys, the AFSBn commander, as a key

member of the SOC team, assumes responsibility for not only installation enterprise sustainment but also for installation field-level sustainment operations.

The AFSBn commander, augmented by a 22-Soldier contingency active duty for operational support (Co–ADOS) team, the sustainment brigade’s rear detachment, and subordinate headquarters, continues supporting operations. In the past, when sustainment brigades deployed, support functions were typically contracted for or migrated to different installation elements. Where a supported unit previously would coordinate with just the sustainment brigade for most of its support requirements after the functions migrated, unit coordination became complicated, with numerous touch points in many different locations.

By doctrinally recognizing the SOC and AFSBn colocation, future migration of functions becomes unnecessary. The supported unit will continue to go to the SOC with operational sustainment requests. Deployments will have very little impact on systems and processes.

Local Sustainment and Distribution Manager

Army doctrine should recognize that the sustainment brigade functions as the commodity, maintenance, and distribution manager for locally-supported mission requirements, contingencies (to include deployment support), and support of installation operations.

Given the doctrinal recognition of the SOC and the AFSBn colocation, the sustainment brigade commander can allocate a tremendous amount of resources toward these management functions. We can again look back at AOE sustainment doctrine and recognize that the doctrinal DISCOM and CSG MMC tactics, techniques, and procedures (TTP) we developed to manage materiel and maintenance at the local level continue to provide the foundation and building blocks of future DOTMLPF changes.

As we dust off old systems like the materiel management review, review and analysis, overall routing identifier code geographical management (to include manager review file functions), and, more importantly, management across a divisional operating environment with an installation-wide logistics common operating picture, the sustainment brigade can meet the requirement to provide responsive answers to both the division commander and the sustainment level of logistics.

CONUS Area of Responsibility Alignment

Regional AORs in the continental United States (CONUS) should be aligned so that each sustainment brigade and its colocated AFSBn support the same warfighters.

With the previous five recommendations, we have seen a doctrinal drive to bring both the operational and enterprise sustainment lines together in order to achieve efficiencies, provide a unified front, and be more responsive to both the senior commander and the enterprise commands. Aligning sustainment brigades and AFSBns to support the same units and geographical areas serves

to further strengthen our efficiencies and unity of effort with impact across multiple elements of the DOTMLPF spectrum.

An example of where efficiency and unity of effort could be improved is in cases where the senior commander with training responsibility and authority for geographically separated FORSCOM units on a nearby Army Training and Doctrine Command installation and AORs for the AFSBn and sustainment brigade are not in synch. By aligning regional AORs as we do in combat, the AFSBn and the sustainment brigade can work collectively to support those units.

Operational Sustainment Unit Alignment

Within the training aspect of DOTMLPF, operational sustainment units should be aligned for home-station training, training at combat training centers, and global deployment.

As a sustainment community, we have successfully supported overseas contingency operations despite numerous challenges associated with multicomposition unit integration, installation culture, and ARFORGEN synchronization. As we remain both a sustainment force in contact and a force that must begin to reshape, we have the opportunity to deploy as we are aligned at home station: sustainment brigades aligned with subordinate CSSBs and companies aligned with their habitually supported division, all nested with the same TTP, standard operating procedures, and training strategies.

We have the ability to develop an EAB training strategy that allows FORSCOM to facilitate a deliberate way ahead that provides multicomposition units with the ability to train jointly on their road to war. We have the ability to allow sustainment brigades, CSSBs, and companies to train together in support of their supported units at the combat training centers in an environment that is competitive with funded external evaluation.

The 2010 Army White Paper, The Profession of Arms, states, “War is a human event Therefore, it is the development of human knowledge, skills, abilities, and attributes associated with each field of experience that are of most importance to the profession.” We can harness this experience by training together on the road to war as we deploy together, fight together, and sustain together.

Sustainment Brigade Deployment Capabilities

Sustainment brigades need to function with the capability to support rapidly deploying units, deploy to an austere environment, open sustainment lines of communication, and sustain operations for an established period of time.

The strategic realities, economic uncertainties, Army force structure adjustments, and different strategic posture of the 21st century dictate that now is the time for the sustainment community to refine, adjust, and adapt to the requirements of the future force. While engaged in two theaters, we have had other quickly developing contingen-

cies that challenged the sustainment community to support on time and on target with integrated support.

The AOE model again provides the model for being prepared to execute the former division ready brigade, maintaining equipment in the vehicle-holding areas, and preparing our Soldiers for 2-hour recall to either execute an emergency deployment readiness exercise or actually deploy within 18 hours.

As we draw on the lessons learned from the past, we can also draw on our experience gained in combat during the last decade. We have learned to harness, through contracting, the strength of a partner nation, and we have learned to use joint teaming to sustain our forces under a “one team-one fight” concept. A contracting capability resident in a sustainment brigade would also make the organization that much more capable in combat and in support of installation operations. Contracting capability is an example of organizational change within the DOTMLPF spectrum that was raised during the conference for consideration.

We must resurrect our rapidly deployable capability and mindset in order to meet the challenges of the future and truly be able to sustain full-spectrum operations wherever our Nation needs us.

The purpose of this article is to encourage sustainers to evaluate our doctrinal missions, roles, and functions while we look to the future of our sustainment organizations and the doctrine by which we maximize support through synergy at the tactical and installation levels. To that end, what started as a dialog among past, current, and future sustainment brigade commanders has developed into doctrinal and other DOTMLPF insights that will shape future generations, infrastructure, leadership, and organization.

The ideas addressed specifically about the doctrine governing the field level of logistics must be refined through discussion with teammates from the Army Materiel Command and the Army Combined Arms Support Command and Sustainment Center of Excellence in order to refine and produce doctrine. After 10 years of war and change, we have the experience, the expertise, and the right people to shape the sustainment community through theory and doctrine to sustain the Army into the 21st century.

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Completing the Chain: Mentorship Needed in Officer Basic Courses

BY CAPTAIN ERIK J. ANTHERS

Based on the decisions of the 2005 Base Closure and Realignment Commission, the Army combined officer training for the three Logistics Corps branches at the Army Logistics University (ALU) at Fort Lee, Virginia. Having the three logistics headquarters located at one post has increased the potential for producing truly multifunctional logisticians. However, this goal requires deviation from traditional U.S. military education practices.

With guidance from the Army Training and Doctrine Command (TRADOC), course developers meld doctrine with personal experiences using the Adult Learning Model when creating curricula for the Combined Logistics Captains Career Course for company-grade officers and Intermediate Level Education for field-grade officers. The amount of knowledge generated by the dialog among individuals within these courses is astounding. Knowing “death by PowerPoint” was the order of business, students used to dread attending officer advanced courses. But those courses have transformed into intellectual, scenario-based symposiums.

Students agree that they are better prepared for their next positions after using this learning model. Captains, majors, and lieutenant colonels gain confidence and improve their competence as leaders by learning Army doctrine and then discussing practical applications and potential shortcomings.

Adapting the Adult Learning Model for BOLC

The professional military knowledge shared among senior logisticians is not being shared with novice logistics officers. Second lieutenants attending the Basic Officer Leader Course (BOLC) are exposed to the “death by PowerPoint” characteristic of past advanced officer courses. One could argue the faults of using the Adult Learning Model to instruct inexperienced officers, but failing to integrate any personal experience into BOLC misses an opportunity to cultivate logistics in the profession of arms and engage in knowledge sharing.

The solution to reducing the knowledge deficit experienced in BOLC is to establish mentorship groups led by superior officers (majors and captains). This simple and near-zero-cost solution would dedicate small blocks of time, as little as 1 hour per week, to examining subjects that lieutenants yearn to know about for their first duty assignments.

Mentorship Program Advantages

Incorporating senior student-led mentorship groups into BOLC would have many benefits. Lieutenants would learn basic yet critical administrative principles that the current BOLC curriculum quickly skims over or ignores altogether because of time constraints.

The forum also would allow lieutenants to candidly communicate with experienced officers outside of the high-stress environment of the operational force. This type of mentorship would also provide junior leaders with a comprehensive understanding of the roles of senior leaders and an opportunity to plan career progression.

Lastly, this type of forum would help improve leadership techniques among field-grade and senior company-grade officers by exposing them to the strengths and weaknesses of groups of new logistics officers. Mentors would be better prepared to manage expectations and tailor future training to strengthen junior officers in their units. Although this is not a panacea for toxic leadership, any pragmatic approach that wards off destructive and neglectful leadership traits is worth exploring.

The fact facing the three branches of the Logistics Corps is that lieutenants, whether assessed as Quartermaster, Ordnance, or Transportation officers, may serve in positions and roles not addressed in their respective branch’s BOLC curriculum. Distributing mentors from different fields of professional and personal experience and expertise to lead small groups of BOLC students is a mechanism that ALU could use to broaden the education of these officers from the start.

By effectively increasing the knowledge base of our junior officers, we can better prepare them to assume any logistics role when they arrive at their first units. Professional development and personal mentorship of officers has largely become something of a lost art as a result of the rigorous training requirements and deployment cycles over the last decade. Providing mentoring officers with officer professional development opportunities will allow them to hone their professional development skills and show junior officers “what right looks like” in the schoolhouse.

This small, budget-friendly investment can reap dividends for our force by sending the best prepared lieutenants and senior officers to their next duty assignments fully prepared and capable of accomplishing the mission together. By emphasizing such a program, the Logistics Corps will send a message that it is serious about the future of its leaders and ready to spearhead a necessary cultural change for the Army.

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Operational Contract Support: Not Just for Contingencies

BY LIEUTENANT COLONEL ROBERT GOULD, USA (RET.)

The differences between contracting in contingency and garrison environments are small. The Operational Contract Support Course provides graduates who can manage all aspects of contracting, whether in a war zone or at an installation.

The last decade has seen extraordinary contracting activity in support of contingency operations. Contract support has been critical to operations in Iraq and Afghanistan and has been a significant part of operations in other nations such as Haiti and Japan.

At one time, in the U.S. Central Command (CENT-COM) areas of responsibility (AORs), the ratio of contractor to military personnel was 1-to-1. Every deployed Soldier, Marine, Sailor, and Airman had a contractor counterpart. The cost for this level of contract support will not be finalized for years to come, but the number will not be small.

Numerous inquiries and investigations have been made into contracting practices, irregularities, and illegal activities over the last decade. One such effort was the Gansler Commission, named after its head, former Undersecretary of Defense for Acquisition, Technology and Logistics Dr. Jacques Gansler. The Gansler Commission was appointed by Secretary of the Army Pete Geren to review contracting linked to the war effort. Although the commission made many recommendations in its final report, which was released in November 2007, I will focus on just one area: training.

The Gansler Commission recommended that the Government provide training and tools for overall contracting activities in expeditionary operations. One of the Army's training solutions was to develop the Operational Contract Support (OCS) Course at the Army Logistics University at Fort Lee, Virginia, to address the implication that "overall" contracting activities include both acquisition and nonacquisition personnel.

The Procurement Process

All procurements go through five basic steps: requirement development, funding, solicitation and award, management, and closeout. Each step requires an organization with an individual who is responsible for executing its procurement responsibilities.

The chart at right illustrates a simplified view of what I consider to be the Army's approach to what makes up overall contracting activities. It shows the five steps in the procurement process, the areas of greatest weakness highlighted by the commission (depicted in red and amber), and the organization and individual responsible for each step of the process [resource manager (RM), contracting officer (KO), and contracting officer's representative (COR)].

Within the requirement development step, the requesting unit is responsible for drafting the performance work statement, independent Government estimate, and letter of justification, providing a purchase request, nominating a COR, and developing a quality assurance surveillance plan.

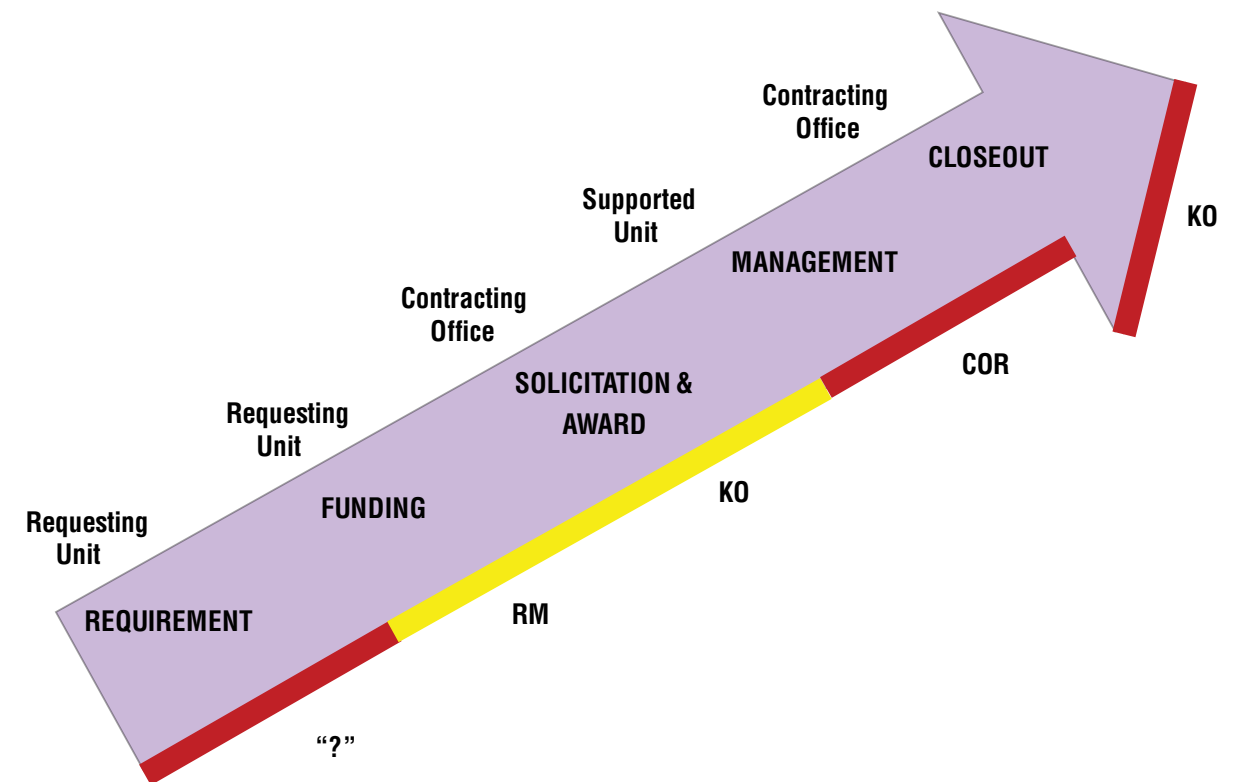
Funding is a unit responsibility and is typically handled by a budget analyst or RM. Solicitation and award is a contracting office function and is managed by a warranted KO. Contract management (not administration) is a unit responsibility and is performed by a COR.

So at each step of the process, someone is trained to perform each specific function. These functions make up what the Gansler Commission called "overall" contracting activities.

The Unit Contract Management Officer

In looking at the chart, you may notice a question mark at the beginning of the process. This is where the chart should show who at the unit is trained to develop and draft the requirement.

The answer, until the creation of the OCS Course in 2009, was "no one." What typically happened was that a COR would be tasked to develop the requirement because he was the only member of the unit who had any contract training. Unfortunately, as depicted in the diagram, CORs are trained to manage contract performance, not develop requirements. Tasking a COR



This chart depicts the Army's overall contracting activities. It shows the five steps in the procurement process, the areas of greatest weakness highlighted by the Gansler Commission (depicted by the colors red and amber), and the organization and individual responsible for each step of the process. The question mark indicates that no one was responsible for requirement development until graduates of the Operational Contract Support Course began performing that role while managing all aspects of a unit's contracting activities.

usually resulted in improperly written requirements that led to reworking of requirements, inefficiency, and a high level of frustration among all players in the process.

Today, the person responsible for requirement development (as well as management of all aspects of a unit's contracting effort) is the OCS Course graduate. We will call this person the unit contract management officer (CMO). The Army is now building a cadre of CMOs trained to develop requirements and manage "overall" contract activities involving operational units. Support organization tables of organization and equipment (TOEs) are being updated to add the additional skill identifier associated with these trained individuals—just in time for the drawdown of forces.

Contingency Versus Garrison Contracting

Is the application and training of operational contract support only useful in an expeditionary or contingency environment? Or, to put it another way, is the procurement process any different in Taji, Bucha, Kandahar, Islamabad, Fort Lee, Fort Hood, or Fort Stewart? The answer, basically, is no. There certainly are differences on the fringes. Spending thresholds may be different,

staffing processes may be different, and additional or different documentation may be required. But at its core, the procurement process is the same, whether in a contingency operation or a garrison. Every procurement, no matter where you are located, requires the five steps mentioned above.

Does an installation require less outsourcing (contracting) than a contingency operation? No. Installation outsourcing is a fact of life and will continue to be so for the foreseeable future. Just look around your post. Who cleans your buildings? Who does grounds maintenance? Who landscapes? Who teaches? Who maintains? In many of these cases, it is contractors.

Garrison outsourcing requires the same amount of effort and oversight as expeditionary or contingency contracting. Poorly written and managed requirements do not magically cost us less money or less frustration just because they occur in a nonwartime environment. This is why I contend that the OCS skill set is applicable and critical to garrison contracting efforts. The CASCAM commander understood this in 2008 and placed the burden for sustainment contracting squarely on the shoulders of the sustainment community, on and off the battlefield.

“I WANT OUR SUSTAINMENT FAMILY TO TAKE RESPONSIBILITY FOR ALL CONTRACTED SUSTAINMENT SUPPORT BOTH ON AND OFF THE BATTLEFIELD IN ORDER TO ENSURE THAT QUALITY CONTROL IS STRICTLY ENFORCED AND STEWARDSHIP OF ARMY RESOURCES REMAINS A TOP PRIORITY.”

—CASCOM COMMANDER TRAINING GUIDANCE
24 SEPTEMBER 2008

Earlier, I mentioned that the procurement process is the same no matter where it is executed, except for possibly around the fringes. This does not mean that the fringes are unimportant. For example, in a garrison environment, the requiring activity (the unit) is still responsible for preparing the requirement package needed to initiate the process. This includes drafting the performance work statement, independent Government estimate, letter of justification, purchase request, and quality assurance surveillance plan and nominating the COR.

The difference in a garrison environment is that the package may include different forms and must be input into the General Fund Enterprise Business System (GFEBS). The basic OCS skills used by CMOs to begin and manage the process in a wartime environment are duplicated in garrison. However, because of the automation used in garrison, CMOs should become as familiar as possible with GFEBS, Wide Area Workflow, and Electronic Funds Transfer when performing their duties in a garrison environment.

Standardizing Procedures

Another “fringe” difference is the level of procurement process standardization. In the current operations in Iraq and Afghanistan, procurements must comply with the requirements in a document called “Money as a Weapon System” (MAAWS). This document is the standard operating procedure (SOP) for spending money in each of CENTCOM’s AORs. It details spending thresholds, the approval levels for those thresholds, and the boards or forums that must approve each requirement.

Many of you are familiar with the term “Joint Acquisition Review Board,” or perhaps “Joint Facilities Utilization Board.” These boards, their members, and their roles are built with input from key players such as the J-4, J-8, J-6, J-7, legal, and contracting staffs to ensure that everyone follows the same rules. Approval authorities, roles, and processes are known.

In garrison, this should be the case as well. I say “should” because each installation has its own way of vetting requirements and may or may not have an SOP. However, the garrison will have a process for vetting, whether it is formal or ad hoc. The spending thresholds may be different, the key players may have different

names, and the forms may be different, but the garrison will use an established process.

So all requirements will be vetted to some level of authority based on the commander’s guidance and the nature or cost of the requirement. Just as in a contingency environment, the responsibility for initiating and

tracking a requirement through the process remains with the requiring activity (the unit) and its respective CMO (an OCS Course graduate).

Operational contract support should be an enduring unit training requirement. This includes our sister services. The procurement process is not unique to the Army. It is a Federal process that must be followed by all Federal agencies. Here are a few recommendations to help improve requirements development and contract management in garrison:

- ❑ A Department of Defense (DOD)-level version of the OCS Course should be developed.
- ❑ Army TOEs should be modified to require that personnel with the OCS additional skill identifier be added to all S-4 and G-4 sections at battalion and above.
- ❑ The Army Mission Installation Contracting Command (MICC) should consider developing an SOP similar to the MAAWS to be used as a guide by installation commanders in managing installation contracts.
- ❑ G-4s should own the local process and formally establish the local SOP using the MICC SOP as a guide.

Although operational contract support may be perceived as only applying to wartime contracting, this is clearly not the case. With impending budget reductions and the strong potential for a reduction in the size of the Army and DOD, outsourcing both in garrison and in contingency environments will be a growth industry that places a premium on the operational contract support skill set.

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Force Management and the Future of the Army Physician Assistant

BY MAJOR BILL A. SOLIZ

The physician assistant is an important part of the Army Medical Specialist Corps. However, the current career path has little room for advancement. The author offers steps that the Army could take to remedy this situation.

The physician assistant (PA) profession in the United States began in October 1967 when three former Navy corpsmen graduated from the Duke University PA program. The profession, which came about during a nationwide physician shortage, was developed based on a medical model similar to the way physicians were fast-tracked through training during World War II.

Since the Army was losing physicians to civilian practices in the 1960s, it quickly saw the benefit of PAs. With congressional approval, the Army trained 400 PAs, and the first class graduated in July 1973. The other services quickly followed the Army’s lead and started their own programs.

PAs initially were warrant officers. In February 1992, the Army began commissioning PAs into the Army Medical Specialist (SP) Corps. Other commissioned officers already in the SP corps included occupational therapists, physical therapists, and dietitians. This was a major force-management transition for the Army, and it took many years to work out the issues resulting from this change.

Much progress has been made over the years, but major concerns for the future still need to be addressed. The most critical issue that needs immediate attention is the significant lack of PA field-grade officer authorizations in both the operating and generating forces.

Field-Grade Officer Deficit

The field-grade officer deficit began when PAs were first commissioned in 1992. Commissioned rank was awarded based on a warrant officer’s time in service and educational background. Since few PAs had sufficient educational backgrounds during the constructive credit calculation for commissioning, only a few were appointed as field-grade officers.

Many PAs decided not to go the commissioned-officer route and, instead, resolved to finish their careers as warrant officers and retire. Others who did not finish their degree requirements for commissioning by the deadline were forced out or involuntarily retired. This created a severe manpower shortage, especially at the higher ranks. Moreover, half of the remaining PA force was eligible for

retirement during the post-Desert Storm timeframe when stop loss and the retiree recall expired.

Many of the field-grade PA authorizations were transferred elsewhere in the Army Medical Department (AMEDD) because the newly transitioned PA inventory did not have the field-grade officers to fill the positions. Even when the PA inventory developed and transformed, these authorizations were never returned, which resulted in the present-day force structure inequality.

Current PA authorizations and inventory are unbalanced and do not provide for reasonable growth past the O-4 (major) level. The total number of PA authorizations for fiscal year 2011 was 803, and of those, only 29 were for O-5 (lieutenant colonel) and 3 for O-6 (colonel), making the total for O-5 and O-6 less than 4 percent of the PA authorizations. This affects the life-cycle model for growth and development for all PAs because once a PA attains the rank of major he has little promotion potential. With this realization, the PA community must anticipate abnormally high nonselection rates for lieutenant colonels and colonels.

The Army is currently well over strength in PAs at the O-3 and O-4 levels. The fiscal year 2011 staffing document had O-3 and O-4 authorizations at 536 and 149 respectively; however, the 2011 inventory had 623 O-3s and 234 O-4s. This force structure does not provide for sufficient career progression and appears to become a throw-away force at the grade of O-3.

The best Army PAs view their profession in the Army as having little progression potential, unchallenging positions, and a bleak promotion rate. Meanwhile, their skills are valuable and the civilian job market is attractive. The best PAs will start to look at the civilian sector just as the physicians did in the past. In 2010, *CNN Money* magazine ranked the PA profession as the second best job in the United States for the past 3 years. The inability to retain quality PAs at all levels will soon be a reality the Army will have to manage.

Mentoring

Increasing the number of field-grade officers in the PA profession would help provide leader development for junior PA officers. In any area of concentration (AOC),



A physician assistant examines a patient's finger as part of a typical workday for a deployed medical team. (Photo by Private Emily V. Knitter)

the only one that does not have a GO.

Needed Upgrades

Some PA authorizations need to be upgraded to the field-grade level in order to achieve the rank structure required to conduct the warfighting mission properly. With the development of the brigade combat teams, the PA position in the brigade support battalion was

established appropriately as an O-4 senior PA. The PA positions in all of the combat aviation brigades need to be upgraded to O-4 as well.

In the special operations community, the 75th Ranger Regiment headquarters has properly documented its PA as an O-4. The same needs to be done in the 528th Special Operations Sustainment Brigade and the 160th Special Operations Aviation Regiment. The Army Special Operations Command headquarters PA billet is currently an O-4 and needs to be upgraded to an O-5. This is necessary because the command PA is the assignments officer for all special operations PA assignments and needs to have a rank equal to that of the staff officers he negotiates with to perform his duties.

On the AMEDD TDA, upgrades to O-5 also need to be made for all PA directors of specialty programs (emergency medicine, orthopedics, and general surgery) and for all of the phase II clinical coordinator positions at phase II hospital sites. A tiered career-progression rank structure up to O-6 for specialty PAs is needed; it currently cuts off at O-4. These upgrades are needed to represent the PA training programs since all of the other program directors and clinical coordinators for other medical programs are either O-5s or O-6s. All of these changes are needed to give the PA officer the proper rank and authority to perform his duties within the staff command and rank structure.

Lack of PA Senior Grade Authorizations

Not enough authorizations currently exist in the generating force (AMEDD) to provide for assignment diversity and to develop PAs who are competitive for promotion and leadership positions. When this article was written, no PAs at the O-5 or O-6 level had been selected to command a TDA hospital or an AMEDD training command because no advocacy or mentorship

existed to establish that career path for PAs.

All of the other AMEDD corps have adequate representation because most of their authorizations are in AMEDD. However, 80 percent of the PA authorizations are in the Army Forces Command and only 20 percent are in AMEDD. PAs excel in the operating force because they are respected at all levels of command as the trainers and leaders of the combat medics and the battlefield “docs” who save lives. Commanders rely on this multifunctional officer not only to provide healthcare as a clinician to the Soldiers but also to serve as a staff officer advising on the medical readiness of the unit and to provide operational health service support.

In AMEDD, however, the PAs do not have the opportunity to lead at all levels of clinic command. The experience and diversity gained from operating a clinic, supervising civilians, writing policy, managing a budget, and developing medical education opportunities are key skills that must be mastered to be a successful clinic or hospital commander. As PA officers increase in rank, their opportunities to serve in the operational force as clinicians decrease because of the rank structure of maneuver commanders and staff. Thus, ample PA positions need to be available in the generating force to provide increased responsibility and opportunity.

Solving the Authorization Problem

The Army has always been short in its physician inventory. PAs are trained as family practice generalists and can be employed in all medical and surgical services. In the civilian sector, PAs are currently employed in all the same specialty areas as physicians. Using more PAs in medical treatment facilities will assist PAs with their professional and clinical development and decrease the Army's strain caused by the physician shortage.

New PA positions can be funded by authorizations that are not being used by hospitals or AMEDD. This will ultimately increase both Soldier and dependent access to care. Other key positions that could benefit the Army and the career progression of PAs include—

- Commander of a forward surgical team.
- Staff officer on the Joint and Army Staffs.
- Staff officer in the Office of the Surgeon General.
- Staff officers at combatant commands and theater special operations commands.
- Faculty at the Uniformed Services University of the Health Sciences, the Army Command and General Staff College, and the United States Military Academy.

PAs should have the opportunity for assignment to important developmental positions in order to prepare for future command and key leadership positions at the field-grade level. Not all PAs will choose this career route, but those who do need the opportunity to compete for these positions in order to demonstrate the mastery of skills, knowledge, and abilities needed to command and

fill key leadership positions. Currently, most PA assignments are clinical in nature, and developmental jobs and leadership positions are scarce.

Some opportunities exist in AMEDD branch-immateral positions. However, those jobs are scarce as well and depend on the luck of timing and the competition pool. Several fortunate PAs have had the opportunity to command at the company-grade level in years past. Two PAs have commanded forward surgical teams as field-grade officers, and two O-6 PAs have commanded an Army health clinic and a combat support hospital. Although all of these PAs were successful as commanders, none of them received any key developmental positions to prepare them for assuming command, which would have made them more successful.

Some of the key developmental positions PAs should be allowed to fill include executive officer or S-3 with a combat support hospital or medical battalion, primary staff officer with a medical brigade, deputy division surgeon, and Army health clinic or medical treatment facility chief of staff, executive officer, or deputy commander for clinical services. PA clinicians must seek diversity in order to develop their skills and become more competitive for positions of increased responsibility.

The PA profession will continue to grow in the Army, and so will its officers despite their many challenges. Change takes time because of the dynamic nature of the Army. Great progress has been made over the years in integrating the PA AOC into the operating and generating forces, but the PA AOC still lacks sufficient field-grade authorizations to provide for officer growth, professional advocacy, and career progression.

Providing these valuable officers with more positions and opportunities will help retain quality PAs, allow for leader development and mentorship, increase leadership opportunities, increase access to care, provide assignment diversity, increase competitiveness for promotion, and promote, sustain, and enhance warrior and military family healthcare. With the appropriate increase in PA field-grade authorizations, experienced PA field-grade officers will continue to pioneer in leadership roles, leading by example and mentoring the next generation of PA leaders.

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Developing Logistics and Property Accountability in the Afghan Uniform Police

BY CHIEF WARRANT OFFICER 2 SELINA GILLIAM

Soldiers of the 728th Military Police Battalion were assigned to train, advise, and mentor Afghan Uniform Police personnel and help them enforce Afghan logistics procedures.

While I was deployed to Afghanistan in support of Operation Enduring Freedom, I was given a unique opportunity to participate in the mentorship mission of the 728th Military Police Battalion, Task Force Warfighter, partnered with the Zone 202 Shamshad Regional Police Headquarters (RHQ). I label this opportunity “unique” because of my junior grade as a warrant officer and my duties, which, at first glance, seemed outside the typical responsibilities of a battalion property book officer (PBO).

I arrived in theater as a warrant officer 1 and sought the guidance of senior logisticians on how to proceed

as a mentor. I soon learned that the North Atlantic Treaty Organization (NATO) Training Mission–Afghanistan (NTM–A) had devoted years and extensive resources to developing the Afghan logistics system and its capabilities. My primary function would be to enforce Afghan-approved logistics doctrine and procedures.

Many rotations before ours had trained, advised, and mentored the Afghan Uniform Police (AUP), and many more will continue to do so. My particular position, serving as the mentor to the Zone 202 RHQ PBO, was exceptional because it was the first time anyone in that position had been partnered with his own mentor. The

Afghan Uniform Police (AUP) personnel attend the first Zone 202 AUP Logistics Conference at the Zone 202 Regional Police Headquarters in Kabul, Afghanistan.



A Zone 202 AUP logistics mentor inventories the Nuristan Government Center provincial headquarters' ammunition reserves.

assignment of a mentor is considered a great honor in the AUP, as it is throughout the Afghan National Security Forces (ANSF). The partnership with my Afghan counterpart served as a good foundation for our future undertakings.

The Foundation

Zone 202 is responsible for 8 Regional Command East provinces, which include a population of more than 8 million. Our zone had 18,000 AUP officers and 84 districts and was responsible for more than 26,000 pieces of equipment.

The progress of the NTM–A, operating in conjunction with Combined Security Transition Command–Afghanistan (CSTC–A) and the mentors who came before us, was immediately evident through the established Ministry of Interior (MoI) operating procedures that my AUP PBO counterpart was using. Although these processes seemed primitive by our standards (primarily because of the lack of automation), a property accountability system had been established nonetheless.

Ledgers were kept and filed in large books and binders in numerical order based on the stock number. Two forms were used for property book accounting. MoI Afghan National Police (ANP) Form 3328 was referred to as “the property book page.” The other was the MoI ANP Form 3328–1, or “the serial number page.” Equipment authorizations came from the Tashkil, an authorization letter similar to our modified table of organization and equipment (MTOE).

The Zone 202 PBO was responsible for maintaining property book records of 8 provincial headquarters (PHQs) and the 84 district headquarters (DHQs) in its area of responsibility. Tashkil shortages were requisitioned from the MoI using the MoI Form 14, Request for Issue and Turn-in. Shortages resulting from consumption were required to have a consumption report attached, along with a copy of the Tashkil authorization, according to MoI policy.

Challenges

It was not long before the unique challenges of the AUP logistics system became evident. Synchronizing logistics initiatives in training and policy execution quickly became the priority because the apparent breakdown in this area was affecting the accuracy and reliability of property book records. MoI Form 14s were hard to track, and the PBO had no established means to follow the progress of these requisitions.

The PHQs rarely submitted consumption reports,



which caused their requisitions to be rejected. PHQs often went around the system, going directly to the MoI. In these instances, receipt documents (MoI Form 9, Materiel Issue Order) were never submitted to the RHQ, leaving the PBO unable to maintain proper accountability. Until a fully visible and accessible web-based system is available to all, it is necessary to emphasize the requirement for a paper trail that is routed back down through the RHQ to the PHQ.

Supply clerks at several DHQs were untrained and unable to provide or maintain accurate property book records. The low literacy rate of AUP workers in supply jobs at the subordinate echelons presented a significant challenge to training efforts. The RHQ logistics directorate appeared to be not very forward thinking. Some of this may have been cultural misinterpretation, but the frequent emergency resupply missions were evidence of negligence. The practices of stockpiling and hoarding equipment at PHQ depots were common, and cross-leveling efforts were met with some resistance.

Solutions

A key factor in improving accountability was the coalition mentors' role in advising their AUP counterparts at the PHQs, DHQs, and MoI. Our contributions to this effort included an MoI Form 14 tracker and a monthly



Two Zone 202 AUP logistics mentors conduct a joint weapons inventory of the Shamshad depot. The team checked the weapons for property accountability and recorded serial numbers.

II (clothing and individual equipment), III (petroleum, oils, and lubricants), V (ammunition), and VII (major end items) to minimize emergency resupply and encourage forward planning within the RHQ.

In an attempt to overcome the challenge of training a force with low literacy rates, our battalion maintenance officer, in conjunction with his Afghan counterpart, developed an AUP publication modeled after the U.S. Army's *PS* magazine. In the spirit of the original, the AUP version of *PS*

magazine also includes supply management contributions. The magazine could potentially be an effective tool in overcoming literacy barriers to logistics training until large-scale literacy training initiatives come to fruition.

It was truly a privilege to be part of the Task Force Warfighter team and to partner with the AUP. I am confident that our contributions have promoted positive change not only in RHQ but throughout the AUP and NTM-A. The mission to train AUP personnel and develop sustainment operations began before we arrived in Kabul and will continue as future rotations pick up the baton and keep running.

I hope that the information included in this article will empower other junior warrant officers who find themselves on unfamiliar terrain by shortening some of the learning curve. I also wish to foster continued cooperation and information sharing of all coalition mentors across the Afghan theater and Army sustainment community.

Change in Afghanistan is a marathon, not a sprint. Each year, Soldiers carry on the work of those who came before them, adapting and refining methods to stay abreast of the situation on the ground. Familiarity with past and present issues and fulfilled goals will ensure unobstructed progress. As the AUP continues to develop, I trust that passing on my experience will serve to assist other mentors.

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logistics conference. The MoI Form 14 tracker, which was designed to correspond with MoI Form 3, Register of Supply Actions, and MoI Form 4, Document Control Register, offered visibility to coalition mentors at all levels.

Afghan logisticians and their coalition mentors were invited to attend monthly logistics conferences held at the RHQ. The conference was not only a forum to hold PHQs accountable for dueouts; it was also an excellent opportunity to conduct logistics training and allow the RHQ to address all PHQs simultaneously. Both were excellent tools in our efforts to streamline accountability, promote routine inventory, and emphasize proper documentation of incoming and outgoing supplies and correspondence.

Evaluation criteria used to determine the readiness of an ANSF element to become "independent" is relatively subjective in all areas except for equipment. For this reason, it is particularly important that PHQs and DHQs were filled according to Tashkil authorization as much as possible.

Once reliable quantities were reported to the RHQ, the next logical step was to redistribute excess within the RHQ. Cross-leveling is conducted through a cipher (an official order). As is often the case in the U.S. military, the AUP rarely executes anything without a direct official order. A direct official order also holds personnel accountable, and the employment of coalition mentors at PHQ or DHQ to facilitate implementation in their area of operations can assist in its effectiveness.

Transparency is a key element of property accountability. This philosophy is true across the logistics realm. By cooperating with our Afghan counterparts, we developed an AUP logistics status worksheet that monitored the consumption of classes I (subsistence),

Through the Eyes of a Warrior

BY SIOBHAN R. YARBROUGH

Civilian Logistics Career Management Office (CLCMO) logistics interns must complete various requirements to graduate and begin their careers as Federal employees. One of the most challenging aspects of the program is the 4-month-long Basic Officer Leader Course (BOLC), during which interns train on Army doctrine and customs alongside lieutenants.

Danny Osborn, Leticia Williams, and I were interns who benefited from training with a BOLC class in a Sustainment Warrior field training exercise (SWFTX) and on the rifle range.

During SWFTX, Danny Osborn led the opposing force (OPFOR)—a small engagement team that modeled possible attacks that could occur in a fight. For this exercise, the OPFOR engaged U.S. forces by attacking their operations and causing harm and destruction to their tactical vehicles. The team approached Soldiers entering the village, and if Soldiers caused problems or did not ask the right questions, a two-man team of "insurgents" used mortar rounds or indirect fire to fire on the force from a nearby building.

The OPFOR engagements taught Soldiers how to react under fire and officers how to direct their Soldiers. If personnel were shot, lieutenants had to call in medics or drag them off the field. When U.S. forces entered the insurgents' buildings, they searched the building and the insurgents. These events were true-to-life scenarios.

The OPFOR had a six-man insurgent team that simulated combat conditions by using improvised explosive devices and by attacking the main base with mortar fire. The insurgents were able to take the entry control point and two towers and clear the tactical operations center and four commanders' tents.

This battle drill helped the warriors experience what would happen if a base was attacked. The Soldiers grabbed their body armor and Kevlar helmets and used situational awareness to address the circumstances they faced. As an OPFOR member, Osborn witnessed how Soldiers bonded and pulled security in an effort to identify the enemy. Once the enemy was identified, the teams returned suppressive fire.

After each scenario, students representing the U.S. force participated in an after-action review where they discussed what happened and how their response to the situation could have been improved.

Through various SWFTX training events, Leticia Williams gained respect for the warriors and the officers. During SWFTX, the tactical operations center was a business center in which commands were distributed and decisions were made. Some of the Department of the Army civilian interns assumed such staff positions as

the S-1, S-2, S-3, S-4, public affairs officer, battalion movement officer/unit movement officer, forward operating base mayor, and contingency operating post mayor.

Williams was assigned as the S-2. She was responsible for gathering information about weather conditions and previous attacks that had taken place on the situational training exercise lanes. Williams received back briefs from the lieutenants about their attacks and the quick reaction force techniques they used to combat the OPFOR. By holding this position, Williams realized how important it was to have accurate information in the fight.

On the rifle range, I reached for an M16A2 rifle for the very first time in my life as the range officer called, "Take your positions. Firers ready. Ready on the left. Ready on the right." Weighted down with a modular lightweight load-carrying system, individual body armor, and a Kevlar helmet, I watched intensely as the instructors provided safety information and explained how to zero the weapon.

As sweat beads trickled down my back and across my forehead, I anxiously assumed the prone position and loaded a magazine into my weapon. The taste of dirt and dry air filled my mouth as I fired a round. Wearing full "battle rattle," I quickly learned the importance of physical training. As a civilian, I had never experienced such an intense event on the job, and it gave me a newfound respect for the operations Soldiers undertake to keep our homeland safe.

BOLC provided an opportunity for us interns to "see through the eyes of a warrior." Through BOLC, we learned more than academics. We also learned survival skills through tactical training, combatives courses, and a SWFTX. Although BOLC was challenging at times, it was an experience that we will never forget and that has helped us to understand our customers, the Soldiers.

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THE AUTHOR THANKS LETICIA L. WILLIAMS, NOW SERVING AS A LOGISTICS MANAGEMENT SPECIALIST WITH THE PQDR [PRODUCT QUALITY DEFICIENCY REPORT] TEAM AT THE CE-COM LCMC, AND DANNY OSBORN, WORKING AT THE MILITARY SURFACE DEPLOYMENT AND DISTRIBUTION COMMAND, PORT OF ROTTERDAM, THE NETHERLANDS, FOR CONTRIBUTING TO THIS ARTICLE.

Rethinking the Last Tactical Mile: Adaptive Air Logistics in Africa

BY MAJOR JOSEPH D. GADDIS, USAF

Airlift operations in Africa face unusual political and infrastructure challenges. The author believes that exercises provide opportunities to test new solutions, such as the use of contracted commercial aircraft.

The C-17 from the Heavy Airlift Wing in Papa, Hungary, landed in Entebbe, Uganda, for its first successful entry into East Africa. Exercise Atlas Drop provided a low-threat opportunity to blaze diplomatic clearance trails for the new wing, which will pay dividends for AFRICOM in the future. (Photo by Maj. Joe Gaddis, USAF)



Military air logisticians expect flexibility in air power when it comes to the rapid movement requirements of medical evacuations, natural disaster relief deployments, and contingency operations. It has become second nature for the U.S. military to plan for its aircraft to flexibly meet imminent requirements around the globe. However, when it comes to the austere African environment, system “flexing” is often not enough to accomplish the mission.

The two main challenges for air logisticians in Africa are access to suitable airfields near the area of operations and prompt procurement of aircraft that can travel to the designated location. Just as the military has adapted its strategy for fighting the war on terrorism from conventional warfare tactics to nonconventional methods, so too must air logisticians adapt to nonconventional methods to operate in the relatively undeveloped conditions found in much of Africa. Exercises like



U.S. Army jumpmasters and U.S. Air Force loadmasters push low-cost resupply bundles onto dropzones at Olilim, Uganda. (Photo by Maj. Joe Gaddis, USAF)

Atlas Drop '11 in Uganda provide low-threat developmental opportunities for air logisticians to rethink tactical airlift and develop effective long-term solutions to the tyranny of time and distance in austere environments.

Problems During Natural Fire '10

U.S. Army Africa (USARAF) first experienced the challenges of using conventional U.S. military airlift methods in Africa during exercise Natural Fire '10. In that exercise, U.S. Africa Command (AFRICOM) C-130 Hercules transports were unable to use the "suitable but unusable" airfield in Gulu, Uganda, because of the limited weight-bearing capability of the last 1,000 feet of the runway. This airlift shortfall generated a requirement to transport three 11th Aviation Company CH-47 Chinook heavy-lift helicopters from Fort Knox, Kentucky,

to Gulu, Uganda, which required a \$3 million increase in the exercise's budget.

During redeployment from the exercise, the U.S. Air Force C-17 Globemaster III cargo planes allocated for the operation were subsequently reassigned to support higher priority missions. The multinational Heavy Airlift Wing C-17 unit from Papa, Hungary, was unable to provide an alternative because of problems with its diplomatic clearance request processes. After these two redeployment plans failed, a 3-week wait ensued while AFRICOM obtained diplomatic clearances for



Soroti Airfield in Uganda served as the primary location for exercise Atlas Drop '11. (Photo by Maj. Joe Gaddis, USAF)



its C-130s to finally recover the troops and equipment from the exercise.

USARAF logistics planners and staff had the choice of accepting this as the norm for working in Africa or changing the dynamics of tactical airlift to meet the logistics needs of future exercises. Atlas Drop '11 provided an opportunity to change the dynamics by using contract aviation.

Working With Uganda's Air Force

In the past, Atlas Drop exercises focused on joint, multinational airborne operations with North African nations. However, 2011 presented an opportunity to transform the focal point of the exercise to spotlight joint aerial resupply. The Ugandan military welcomed this exercise as a chance to integrate platoon-sized resupply into its operations.

As the lead U.S. component for the exercise, USARAF chose to use aircraft and airdrop systems that are similar to the capabilities currently accessible in Uganda. Those air platforms included the Ugandan Peoples Defence Air Force (UPDAF) Bell 208 Jet Ranger and Russian-made MI-17 helicopters. USARAF contracted for a Cessna 208 Grand Caravan light transport to mimic the capabilities of the UPDAF's small aircraft resources, like the Chinese-made Y-12, Russian-made AN-2, and Italian-made P-92 utility aircraft. The U.S. Air Force provided a C-130, which has capabilities similar to the Russian-made AN-12 transport and the L-100 transport (the civilian variant of the C-130), for which the UPDAF routinely contracts.

A National Geospatial-Intelligence Agency map shows Soroti in east central Uganda.

The four aircraft not only provided redundancy for the exercise, but they also demonstrated solution sets that the UPDAF could immediately use in their military operations. Contracting airlift in Atlas Drop '11 provided USARAF the opportunity to experiment with new methods of air delivery without the diplomatic and airfield restrictions that often accompany the operation of U.S. military aircraft in Africa.

Impact of Airfield Restrictions

As with Natural Fire '10, the U.S. Air Force faced airfield restrictions in Atlas Drop 11 with the basing location at Soroti, Uganda. The last 1,000 feet of the runway did not meet the weight-bearing load requirements for the C-130, and not enough time was available to request that the necessary experts recertify the airfield as an "assault landing zone," which has less restrictive surface requirements. Consequently, the U.S. Air Force C-130s provided tactical airlift to Entebbe, Uganda, while smaller contracted Cessna and Beechcraft aircraft provided airlift into Soroti. Compared with the \$3 million cost of moving three CH-47s from Kentucky during Natural Fire '10, the total price tag for all commercial tactical airlift was only \$57,000.

USARAF again invited the Heavy Airlift Wing C-17 unit to participate, this time in a not-mission-critical role. Their successful involvement during the exercise opened the door for reliable use of that unit in East Africa in the future. USARAF designed the exercise around multiple sources of airlift, which eliminated single points of failure and capitalized on the flexibility and capabilities of different aircraft.

Turning to Commercial Freight Companies

Instead of using military airlift to move equipment to and from the exercise, planners used commercial freight vendors. This provided exercise participants with door-to-door delivery service and eliminated the need for extra personnel to channel the equipment through freight and customs areas. The Small Commercial Cargo Program provided reliable commercial channel flight schedules and allowed equipment to be delivered in less than 10 days.

Providing In-Transit Visibility

Not only was Atlas Drop a test bed for commercial tactical airlift, it also offered the opportunity to test new in-transit visibility (ITV) technologies. To date, very few radio frequency identification (RFID) reading systems are on the continent of Africa, rendering RFID tags useless once cargo departs the United States

or Europe. Alternative methods of ITV are in late developmental stages, but their reliability in Africa is unconfirmed. These new technologies include satellite tags, iridium phone systems, and cell phone systems. But the company cell phone of the truckdriver is still the most reliable and, since volume is low, often the best option to use.

As the lead component for surface movement and ITV in Africa, AFRICOM formally tasked USARAF logisticians to “write the book” for ITV use in Africa. USARAF subsequently drafted a command instruction on the subject. Exercises like Atlas Drop provided proof-of-principle opportunities to compare different types of ITV systems.

USARAF used satellite tags for the first time during Atlas Drop. The web-based satellite tag customer interface provided responsive feedback similar to RFID systems in Europe and the United States without the same robust infrastructure requirements. Aircraft interference testing with these satellite tags had not been finalized, so use of the system required the follow-on trucking contractor to activate the systems after they arrived by aircraft.

U.S. Army riggers load low-cost aerial delivery systems (LCADS) onto the Heavy Airlift Wing C-17 in preparation for the following day’s airdrop. Not only was this the first time the wing landed in eastern Africa, it was its first use of LCADS. (Photo by Maj. Joe Gaddis, USAF)



Contracting for Airlift in Africa

Approved contract airlift in Africa is not easy to find. According to Department of Defense (DOD) Instruction 4500.53, DOD Commercial Air Transportation Quality and Safety Review Program, DOD can only contract for air transportation services with companies that are approved by a U.S. Transportation Command-appointed panel of flag officers or Senior Executive Service members known as the Commercial Airlift Review Board (CARB).

The CARB sends a team of inspectors to examine a company’s maintenance, operations, and safety programs to ensure that a risk-appropriate decision is made when choosing civilian air carriers. The inspectors compile a report that goes to the CARB, which is then responsible for approving or disapproving each air carrier.

With only a handful of CARB-certified air carriers working in Africa, the number of available companies shrinks significantly. Contract leadtimes are lengthy, and air advisers are needed to properly identify the desired effects in performance work statements that can be agreed on by the contractor in order to protect both

Ugandan Peoples Defence Force soldiers retrieve airborne-delivered materiel during exercise Atlas Drop '11. (Photo by SFC Brock Jones, 128th Mobile Public Affairs Detachment, UTARNG)

sides legally. However, this cumbersome legwork can be settled early by organizing blanket purchase agreement (BPA) contracts ahead of time. The first Atlas Drop '11 airdrop contract took more than 60 days to complete, from initial solicitation to award. Conversely, it took only 1 day to arrange the movement of personnel using a Combined Joint Task Force–Horn of Africa BPA air contract with the same civilian company. USARAF is now establishing BPA-type contracts for surface movements to capitalize on this highly responsive avenue for logistics supply in Africa. U.S. Air Forces Africa will lead the effort for air safety and contract air for common users, while the AFRICOM Deployment and Distribution Operations Center will prioritize the effort and make the major intermodal decisions.

The Diplomatic Clearance Hurdle

A major question facing logisticians in Africa is whether the legwork of contracting airlift outweighs the challenges often associated with traditional methods of using U.S. military aircraft in Africa, which include lengthy processes to obtain diplomatic clearance. Carrying out a mission into most countries often requires 14 to 21 days of leadtime. For the Hungary-based C-17 unit, this process can be as long as 30 to 45 days.

When working with operations in landlocked countries, diplomatic over-flight clearance lead-

times reduce the flexibility of the DOD airlift system. Domestically registered contract aircraft do not have these clearance issues. Their simple country clearance process enables them to plan a flight in less than a day. Foreign civilian carriers operating in Africa (including U.S.-registered carriers) also face less diplomatic redtape and do not require the same lengthy clearance process as the U.S. military. Building clearance equities among foreign civilian carriers and the U.S. military in Africa supports AFRICOM’s strategic Adaptive Logistics Network, which by definition flexes to meet

U.S. Army jumpmasters familiarize Ugandan Peoples Defence Air Force and Phoenix Aviation aircrews with fixed-wing airdrop techniques in Soroti, Uganda. (Photo by Maj. Joe Gaddis, USAF)





A Soldier from the Utah Army National Guard finalizes the low-cost aerial delivery systems on the Heavy Airlift Wing's C-17. (Photo by Maj. Joe Gaddis, USAF)

the widely varying logistics needs in Africa. (See a related article, "The New Spice Route for Africa," in the March–April 2012 issue of *Army Sustainment*.)

Using Austere Airfields

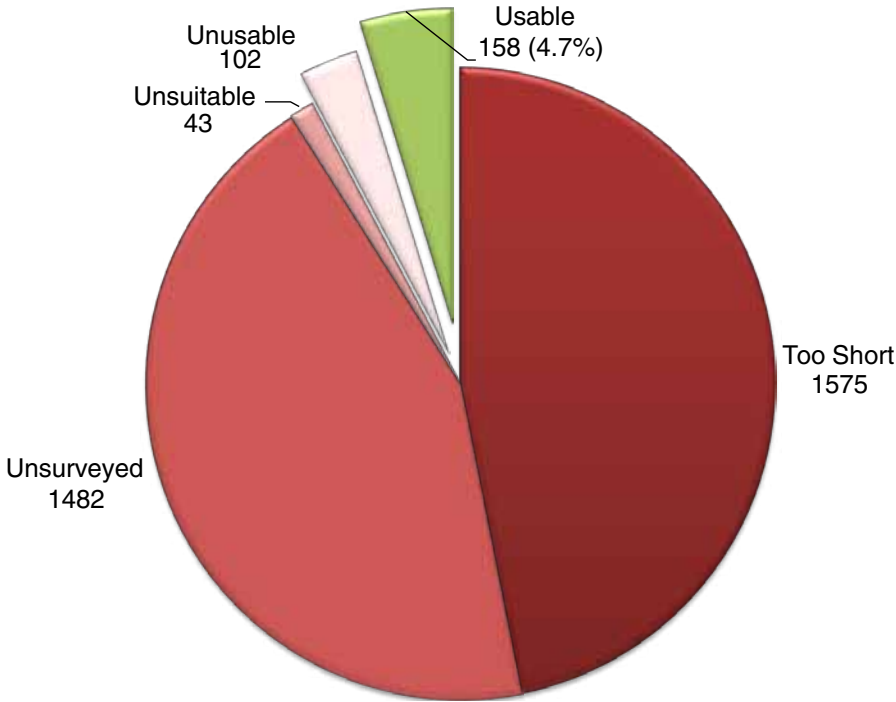
After clearance timing, the next major advantage to using contract airlift is access to austere airfields. Of the more than 3,300 airfields documented by the National Geospatial-Intelligence Agency, only 303 have been surveyed by the U.S. Air Force. One-third of those surveyed are not routinely used by the Air Force, and the surveys have consequently expired. Of the remaining 158 airfields that have current surveys, half have weight limitations that make them impractical for operating a C-130 or larger aircraft.

The practical effect is that the AFRICOM C-130s can only fly into one or two airfields in any given country in Africa. The question for the component commander then becomes, "How do we get the last tactical

USARAF AND AFRICOM

Headquartered in Vicenza, Italy, U.S. Army Africa (USARAF) is the Army service component command for the U.S. Africa Command (AFRICOM). Dedicated to positive change in Africa, USARAF enables full-spectrum operations while conducting sustained security engagement with African land forces to promote security, stability, and peace. For more information about USARAF and its ongoing activities, visit its website at www.usaraf.army.mil.

Number and Type of Airfields in Africa



Most airfields in Africa are not usable by U.S. Air Force C-130 Hercules transports.

300 nautical miles?" The answer is either a nail-biting, backbreaking, multiple-day truck movement or contract air.

While the strategic airlift hubs in Africa have received adequate attention and funding from DOD, the bulk of operations in Africa are not conducted in and around these hubs. To date, there is no effective one-stop shop to which DOD customers may turn for air logistics solutions. As AFRICOM develops, the solution will emerge. DOD simply cannot afford to fix thousands of airfields in Africa to have them meet U.S. Air Force requirements.

The U.S. Air Force requirements could be changed to survey the airfields as assault landing zones rather than as fully operational runways. This would allow C-130s to use significantly more airfields, but it would also impose heavy workloads on already over-tasked special tactics teams or contingency response groups to perform the recurring survey work.

Access to austere fields and aircraft asset availability will always be difficult factors facing the U.S. Air Force in competing on the tactical level with contract air. The simpler, more immediate solution is for the CARB to approve more commercial air carriers operating in Africa. This process allows local companies to

prosper through DOD funding while promptly meeting the customer's needs at a fraction of the cost.

Exercises like Atlas Drop provide opportunities for component commands to test the waters, learn the best practices, and form future policy by writing the how-to book for AFRICOM. By frontloading the contracting process with BPAs from a wide variety of CARB-approved commercial carriers, DOD operations in Africa can get closer to the 24-hour reaction time to which the U.S. military has grown accustomed.

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The 3d Sustainment Brigade Embraces Finance

BY MAJOR TERRY SULLIVAN

The brigade's experience in Iraq demonstrates how finance is being integrated into the mission of sustainment brigades under the Army's modular transformation.

Since the Army transformed into a modular force, changes to the chain of command have affected where finance units receive their technical guidance. During the transition from Operation Iraqi Freedom to Operation New Dawn, the 3d Sustainment Brigade assumed responsibility for managing the finance footprint for the entire country of Iraq.

Because the brigade accepted finance as one of the most important commodities across the Iraq theater of operations, the transformation of finance operations from a stove-piped organization into the sustainment brigade's modular structure was fully realized. The result was to make finance operations a combat force multiplier on the battlefield.

Finance Organizational Transformation

Before its transformation, the structure of finance units was similar to that of other branches. The finance group was commanded by a colonel, the finance battalion was commanded by a lieutenant colonel, and the detachments were commanded by captains. On the noncommissioned officer (NCO) side, there was a command sergeant major at the group level, a command sergeant major at the battalion level, a first sergeant at the battalion level, and sergeants first class at the detachments. When finance units deployed,

the detachments were colocated with brigade combat teams but still reported to the finance battalion, which in turn reported to the finance group. The charts on pages 43 and 44 show the finance organizational structure before and after transformation.

After transformation, the finance group was converted to a financial management center (FMC). Although the FMC has no mission command of lower-level units, it still has a colonel as director and is responsible for providing policy and other technical guidance to finance companies.

The FMC makes policy on matters such as limits on check cashing, casual payments, and how much cash each company can hold to sustain operations. The FMC also has an internal control section that travels to finance companies and conducts on-the-ground inspections. The FMC has a central funding section that resupplies the companies' cash during contingency operations.

The finance battalion was changed to a financial management company (FMCO), and the lieutenant colonel commanding the battalion was replaced by a major commanding the FMCO. The administrative support the finance battalion used to provide is now typically provided by the sustainment brigade's special troops battalion (STB).

Once the finance brigade and battalion were transformed, finance units lost all the finance command sergeant majors in their chain of command. The sergeant major is the senior technical adviser to the FMCO commander. The company also has a first sergeant, who serves as the top NCO in the chain of command instead of the sergeant major.

Although the FMCO is smaller than the battalion staff was, it still has an internal control team that works for the commander, the central disbursing office, a resource management team, an automation team, the finance operations office, and the headquarters section. The former battalion headquarters is now a company headquarters of 27 Soldiers normally aligned with 3 financial management detachments totaling 105 Soldiers.

The detachments remain very similar to their old structure, but the modified table of organization and equipment

Soldiers of the 82d Financial Management Company count Iraqi dinars for a contract payment. (Photo by SPC Cody Miller, 82d Financial Management Company)

(MTOE) is structured for team missions to outlying forward operating bases (FOBs). The financial management detachment consists of 26 Soldiers, organized into 3 financial management support teams (FMSTs) that conduct forward financial management missions. Since the transformation, when the detachments deploy, they report to a FMCO that now falls under the STB, a subordinate unit to the sustainment brigade.

Impact on the Brigade

The addition of finance as a commodity to the 3d Sustainment Brigade created a learning curve for the FMCO, the STB, and the brigade. The interaction among the brigade, the Defense Finance and Accounting Service, the U.S. Forces-Iraq comptroller (J-8), the theater and division resource management comptrollers (J-8 and G-8), the Army Finance Command, and the supported brigade commanders is unique to finance.

Those technical relationships, which used to be maintained by the battalion, are now maintained at the company and brigade levels. The finance technical chain now goes from the FMCO commander to the brigade commander. The 3d STB is not responsible for any interaction with outside finance agencies. A finance cell in the brigade support operations (SPO) office advises the sustainment brigade commander and serves as a link between the outside agencies and the FMCO. The SPO position is critical to keeping the brigade commander informed and up to date on all finance issues.

The brigade financial management SPO (FM SPO) is important to both the sustainment brigade commander and the FMCO. The FM SPO brings finance issues to the brigade commander and converts the finance information contained in reports into information that can be used to make decisions on the battlefield. The FM SPO also forwards the sustainment brigade commander's guidance to the FMCO in finance terms. As the FM SPO does this, the learning curve flattens and both entities become more synchronized.

A brigade tends to track money in the same way that it tracks commodities such as water, fuel, and ammunition. The traditional finance disbursing officers' way of tracking and ordering money is different from the resupply metrics used by other commodities. Funding for a finance unit is governed by many factors that are unique to the finance function, such as how much local business the local bank can accommodate, how many nonroutine payments to local civilians (such as weapons for cash and the Commander's Emergency Response Program) are made, or how many Logistics Civil Augmentation Program contracts have a need for cash payments. This was where the FM SPO uses the Department of Defense Financial Management Regulation and logistics reporting methods to eventually get everyone synchronized.

The FMCO-STB Relationship

As the FMCO's technical relationship with the 3d Sus-

The Army finance structure before transformation.



tainment Brigade was being perfected, its tactical relationship with the battalion was much more seamless. The transition to falling under an STB improved mission command between the brigade and the FMCO commander. The FMCO commander now has a battalion to process administrative actions, provide tactical support, and provide field grade-level Uniformed Code of Military Justice authority. The technical aspect of the previous finance battalion is held at the sustainment brigade, while the tactical authority was held at the STB.

In garrison, the STB had the task of understanding Soldier taskings as part of the garrison finance mission. When Soldiers were required to be at a formation during the duty day or were put on detail, the garrison missions suffered. In- and out-processing, separations, and mobilizing and demobilizing at the home installation required all available Soldiers to keep up with the inflow of newly arriving or departing troops. Pulling one or two Soldiers out of the office created a bottleneck in processing operations. Once the STB personnel understood the garrison mission, they quickly adjusted to supporting garrison responsibilities however possible.

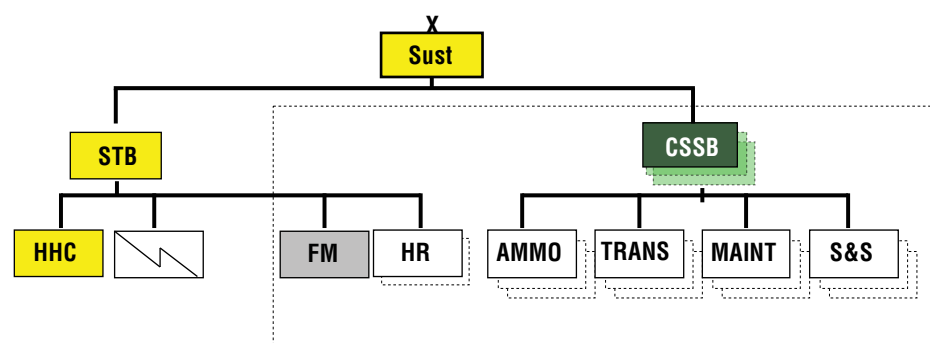
The Brigade Finance Cell

The 3d Sustainment Brigade deployed with two majors and one master sergeant in the SPO section based on the MTOE for Operations Iraqi Freedom and New Dawn in 2010. Since the concept of having finance expertise in the brigade was new and loosely based on field and technical manuals, other brigade commanders adjusted their personnel and strayed from the MTOE in order to find a better fit with the mission after transformation.

The focus of the finance cell at the brigade was to track and report all transactions conducted by the FMCO in both the finance offices and on FMST missions. In addition to tracking the number of dollars spent, the brigade also conducted cash verification missions every quarter. These missions were crucial to ensuring that the finance units maintained and spent cash on the battlefield prudently and accounted for it in order to meet financial management regulations. These audits were performed 4 times per year at 15 different locations, which helped keep the brigade from having any major losses of funds during its rotation in Iraq.

Besides monitoring, tracking, and reporting daily busi-





This chart shows the Army finance structure after transformation as a commodity added to the sustainment brigade.

In addition to adjusting the footprint of finance support to meet the needs of the warfighter on the battlefield, the brigade commander

reduced the finance administrative footprint from two FMCOs to one. Although Field Manual 1-06, Financial Management Operations, mandates that each finance company have three to seven finance detachments, the brigade commander did not see an issue in reducing the FMCO footprint to one company with eight detachments.

After welcoming finance into the sustainment community and gaining knowledge of finance activities, the 3d Sustainment Brigade clearly saw that relieving one finance unit from deploying and shortening another's deployment timeline was the right thing to do for this mission. This relieved the finance community of the necessity of deploying a FMCO to Iraq, thus streamlining operations in Iraq and gaining efficiency and effectiveness along the way.

After seeing the transition and the attention the sustainment brigade put into making the finance mission relevant and successful, it is apparent that finance has been embraced into the sustainment brigade and the logistics community. In the 1980s, finance belonged to the division support commands before becoming separate brigades for the corps. In the 1990s, finance Soldiers fell under battalions and brigades.

Now, finance Soldiers are controlled by FMCOs under the sustainment brigades, where finance operations are integrated into the overall sustainment plan for supported units. Because of this seamless integration, financial support is treated as every other commodity and gains the attention and support of a brigade that is habitually linked to the overall support of their customer units. This ensures that finance operations remain a combat force multiplier on the battlefield.

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The Effect of the Responsible Drawdown of Forces on Class I Sustainment

BY CAPTAIN SOPHIA OBAMIJE

During the drawdown of troops from Iraq, class I managers found that they had to change the way they conducted business to continue to provide Soldiers with the support they needed.

The responsible drawdown of forces in Iraq had a ripple effect on the management of commodities across the Iraq joint operations area (IJOA). For class I (subsistence) managers, the drawdown was not simply the reduction of U.S. forces in Iraq; it meant supporting a larger footprint with fewer resources and adjusting to constantly changing demands.

Base closures, redeployments without replacements, and the transition of theater contracts in and out of the IJOA also created a chaotic whirlwind of events. The purpose of this article is to discuss the class I challenges encountered by the 3d Sustainment Brigade's general supplies office, how those challenges were addressed, the results of actions taken, and potential alternatives to those actions.

Managing Change

The brigade had to constantly balance the level of support during the drawdown. Multiple factors affecting sustainment required leaders to be aggressive and think beyond the 96-hour forecast. Adjustments and readjustments were made to adequately support units in the IJOA.

The 3d Sustainment Brigade subsistence section primarily processed orders that supported 22 mobile kitchen trailer (MKT) accounts, accounted for operational rations (meals ready-to-eat [MREs], halal meals, kosher rations, and unitized group rations), and provided bottled water and ice in U.S. Divisions North and Center (USD-N/C). The mission seemed easy enough: to support personnel with an accurate quantity of bottled water and operational rations.

Proper execution determined the success of the mission. Planning factors, such as the availability of transportation assets, the frequency of movements to

and from forward operating bases (FOBs), and even the performance work statement agreed on by the contractor and the Government, were pieces of the puzzle that could not be ignored. Therefore, if one piece was missing from the sustainment puzzle, the mission would inevitably fail. Preparing for the drawdown forced commodity managers to "step out of the box" and look at the big picture.

Managing MREs

The first challenge encountered was in managing MREs. It seemed that, with the existence of dining facilities and MKT accounts, MREs were no longer being used. The 3d Sustainment Brigade processed an average of 150 sets of food orders each week for the MKTs that it managed.

In order to accurately predict MRE use, we in the class I section used historical data to identify trends. We formulated a monthly stock objective for the FOBs that we supported across USD-N/C. The previous month's daily average issue was used to determine a stockage objective based on 25 days of supply. Each month, we analyzed the MRE consumption rate at the FOBs and determined a new stockage objective.

For example, FOBs with large headcounts that averaged a daily consumption of no more than five cases of MREs in 1 month were assigned a stockage objective of 125 cases. However, one concern was justifying a stockage objective of 125 cases of MREs on a FOB that supported a combined headcount of more than 20,000 military and civilian personnel. The headcount was too large for this stockage objective. With one case of MREs holding 12 individual meals, it takes 1,000 cases per day to support 4,000 personnel if each person eats 3 MRES. The analysis we conducted indicated

Legend	
AMMO	= Ammunition
CSSB	= Combat sustainment support battalion
FM	= Financial management
HHC	= Headquarters and headquarters company
HR	= Human resources
MAINT	= Maintenance
S&S	= Supply and services
STB	= Special troops battalion
Sust	= Sustainment
TRANS	= Transportation

ness, the brigade SPO finance cell planned several courses of action and advised the commander on how to adjust the finance footprint during the reduction of forces in Iraq to 50,000 troops. As the overall footprint of Soldiers decreased, the need for finance support remained.

In addition to cashing checks and making casual payments to Soldiers, the need to pay contracts to local civilians and contractors, finance paying agents, and clear and process the paying agents' business was constant. This is why, as the Soldier count decreased, the need for support at all of the FOBs remained. When the brigade commander was directed to reduce finance forces by almost 50 percent, he paid meticulous attention to how to maintain support to all of the remaining FOBs with half as many finance troops.

Adjusting the Finance Footprint

Since the finance detachment is designed to be broken into three support teams, the brigade permanently split the detachments between two FOBs located in the same general vicinity. Each detachment had two of the three teams attend to daily business on their respective FOBs, while the third team moved from one remote FOB to another that surrounded its area of operations.

All three of the teams were occupied with trying to support the whole country with the limited manpower they had on hand. In order to do this, it was imperative that the brigade commander was aware of the specifics of the finance mission and the demand for finance in each region of the country. He was also aware of the challenge the detachment commander had in providing mission command to his small teams at remote locations.

that because MREs were not the primary meal source, storing MREs based on headcount did not make sense. A large number of MREs could be needed in case of an emergency; however, it was not practical or efficient to store a large number of cases that in most circumstances would not be needed.

Basing the stockage objective on history was a method, but it was not the only factor. The time and distance from Joint Base Balad to direct support hubs and spokes, the average time required to receive MREs directly from the prime vendor in Kuwait, and the frequency of ground and air transportation were all factors in determining a stockage objective. Nevertheless, no perfect equation could determine the final stockage objective, so adjustments were made monthly.

The Effects of Communication Gaps

Other factors greatly affected the way MREs were managed in our area of operations. Factors such as the total number of MREs available across USD–N/C, expiration dates, and money lost because of degradation caused by lack of use and the extreme temperatures in Iraq affected decisions on the management of the meals.

Throughout the deployment, the method used to forecast MRE requirements was effective approximately 80 percent of the time. It seemed as if once every quarter, there was an MRE “crisis,” where the sustainment brigade forecast showed green status for at least 96 hours but the FOB would actually be at a red or even black status. These occurrences were not due to a lack of MREs or of transportation assets to move them but to a lack of communication from the unit of issue. It seemed that many units had no MRE issue plan and no thought of future MRE consumption, which caused a complete absence of predictability.

THE BENEFIT OF USING ITN TO MOVE COMMODITIES WAS THAT CONVOY ESCORT TEAMS WERE NOT REQUIRED TO ESCORT THE MOVEMENTS.

What caused a crisis for battalion commanders, support operations officers, and commodity managers could have been prevented by maintaining open channels of communication, ranging from asking the higher command for advice and guidance to giving the brigade a warning of the planned issue of an unusually high amount of MREs.

Meal Cycles

One alternative we explored was getting the meal cycles of units that were not on an A–A–A cycle. Initially, we assumed that everyone in Iraq received three

hot meals a day. However, this was not necessarily the case for units that routinely conducted missions outside of their FOBs.

The idea of having the units we supported provide us with their meal cycles seemed reasonable, but it was quickly discarded when units began using historical data to project future requirements. This comfortable routine killed the meal cycle concept, which units perceived as an additional obligation. Though continuous improvement was a goal, the idea of fixing something that was not broken prevented the implementation of a plan that would minimize unfavorable incidents affecting on-hand quantities.

As FOB closures in Iraq accelerated, the meal cycle for the decreasing U.S. footprint gradually changed. Contracted dining facilities transitioned into Army-run MKTs to accommodate the decrease of resources. Consequently, MREs were reincorporated into the meal plan, allowing for precise predictability.

Iraqi Transportation Network

One inevitable change that had a significant impact on our operation was a reduction in convoy escort teams that provided security for the logistics movements to our supported areas. The decrease of convoy escort teams meant a reduction in the number of trucks that would be on the road. What may have seemed like a minor change had second and third order effects on how units conducted logistics missions.

One way the class I section mitigated the effects of convoy reduction was by using a local movement contract known as the Iraqi Transportation Network (ITN). We used ITN to move bottled water to our supported areas in USD–N/C. The benefit of using ITN to move commodities was that convoy escort teams were not required to escort the movements. ITN had a 6-day movement window to deliver its cargo. It became the primary resource for moving bottled water, even though the contingency plan was to use regularly scheduled sustainment convoys to support the units in our area of operations.

The 6-day movement window forced an increase in the amount of bottled water moved at one time. The theater used a 10-day stockage objective that allowed flexible operations in periods of restricted movement. Increasing the amount moved through ITN ensured that there was room for managing contingencies without degrading support to units. Within 2 months of beginning to use ITN, we were transporting more than 150,000 cases of bottled water weekly to supported units.

Prime Vendor Change

As preparations for drawdown were underway, the Iraq theater was also preparing to transition from one subsistence prime vendor, Agility, to a new prime

vendor, Anham. We had to guarantee that our customers had all the transition details. Constant communication with the new prime vendor was imperative in understanding changes in the concept of support.

AT TIMES, OPERATIONS WERE CONDUCTED ROUTINELY, AND AT OTHER TIMES, PROBLEMS SEEMED TO BE AT EVERY TURN.

One massive change was the way Anham planned to distribute class I in theater. Agility had supported the theater from warehouses located in Turkey and Kuwait. Locations in northern Iraq from Habur Gate to Contingency Operating Base Speicher primarily received class I arriving from an Agility warehouse in Turkey. Locations from Joint Base Balad south to Tactical Assembly Area Virginia received class I from Kuwait. Anham inherited a huge mission, and it planned to support the IJOA from only one warehouse in Kuwait.

This new distribution plan caused some concern about the time it would take to move class I from south to north without the goods degrading. Would fresh fruits and vegetables survive the move from the south? Anham conducted two test runs to the north that originated in Kuwait. The results of the test runs were positive, with the movement to Contingency Operating Base Speicher averaging 4 days.

We researched the shelf life of frequently ordered fresh fruits and vegetables and the temperature that each item required to sustain that shelf life. The 4- to 5-day movement from Kuwait to northern Iraq cut into the shelf life, but it was manageable. The transition of distribution operations from Turkey to Kuwait began in the middle of September and ended in the last week of November.

As the Anham contract began to take shape in the IJOA, operations appeared seamless. Required delivery dates were met. Any problems that Anham seemed to encounter did not affect operations. However, that soon changed with the first complaint about the receipt of spoiled fruits and vegetables in the north. Images of rotten tomatoes, cauliflower growing bacteria spores, and nectarines covered in mold set off a red alert to all of the units Anham supported.

Would this be the norm for fresh fruits and vegetables coming from Kuwait to the north? That question had to be answered, especially since Anham guaranteed that the support it provided to the units would be equal to that of Agility. The answer certainly had to be no. Commodity managers in the 3d Sustainment Brigade had to simultaneously find a way to resolve the problems with

Anham and restore the confidence of supported units. The time it took to release the fruits and vegetables from the warehouse, the time allotted to load vehicles, the delivery time, and the time each truck remained in the movement control team yard before moving forward were closely monitored. Ten days, beginning from the release at the warehouse to consumption, was the standard set for fresh fruits and vegetables to maintain freshness. These measures forced the contractor to take responsibility for any mishaps that inconvenienced the units in USD–N/C and caused potential delays in class I deliveries. The gradual transition between contractors allowed mistakes to be made and lessons to be learned as FOBs began to receive class I from the new prime vendor.

The drawdown had an enormous effect on class I operations throughout Iraq. Commodity managers were forced to discontinue routine operations and develop ideas to continue to support units on the ground while the gradual reduction of forces and resources was underway. This was not as simple as supporting the shrinking number of personnel with fewer class I rations; it meant factoring in the closures of bases and dining facilities, the reduction of convoy escort teams, and the impact of those events on operations. The drawdown had a domino effect on all support operations.

So what does it take to provide class I support to personnel spread across hundreds of miles of land, ranging from the northern Iraq border at Harbur Gate down to Victory Base Complex and the surrounding areas in Baghdad? The answer is simple: patience, analysis, and constant communication. At times, operations were conducted routinely, and at other times, problems seemed to be at every turn. The solution was to continue what we did well and improve on what we did not while striving to provide excellent customer service to the units we supported.

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Supplying the Forces While Rightsizing Ammunition Storage Activities

BY CHIEF WARRANT OFFICER 3 CHERYL D. MONROE

The 3d Sustainment Brigade's class V section improved the management of excess and unserviceable ammunition and completed the retrograde, cross-leveling, and demolition of ammunition while supporting the drawdown of forces in Iraq.

The 3d Sustainment Brigade support operations class V (ammunition) section provided oversight and management and planned the responsible drawdown of ammunition for the corps storage area (CSA), ammunition supply point (ASP), and seven ammunition transfer holding points (ATHPs) in U.S. Division North (USD-N) and U.S. Division Central (USD-C).

During Operation Iraqi Freedom 10-11 and Operation New Dawn, the class V section coordinated and provided oversight for the movement and resupply of ammunition from the ammunition storage activities (ASAs) throughout the area of operations. The section developed plans, policies, programs, and procedures for the class V wartime mission and future operations. It was responsible for managing retrograde, redistribution operations, and common-item support with the other services.

The class V section was manned with Soldiers with military occupational specialties 890A (ammunition warrant officer), 89B (ammunition specialist), and 89A (ammunition stock control and accounting specialist). Throughout the deployment, the section provided support to seven brigade combat teams (BCTs), six advise and assist brigades, and two combat aviation brigades, including air assault, Armor, cavalry, Aviation, and Engineer units. The class V section verified that all subordinate units continuously possessed the proper combat load and ensured that the supporting ASAs maintained a current site license.

The section successfully provided ammunition support to more than 100 units in USD-N and USD-C. Simultaneously, it supported the retrograde of more than 3,000 tons of ammunition valued at \$278 million to Kuwait and cross-leveled 1,020 tons of ammunition from Iraq to Afghanistan in support of Operation Enduring Freedom.

Reducing Class V in Iraq

While rightsizing ASAs, the class V section continuously anticipated and adapted to changing circumstances. Executing the class V reduction in Iraq and moving the

past 7 years' accumulation of ammunition was a mission in itself. The section developed a plan and supervised the closure of one ATHP and the conversions of the theater's only CSA to an ASP, an ASP to an ATHP, and four ATHPs to four basic load ammunition holding areas.

During the conversions and rightsizing of ASA operations, the section realized that the contractor, KBR, which had been assisting with daily ammunition operations, was removed from the CSA and ASP prematurely. The workload at the time was equivalent to when the CSA was operated by a company-sized element with KBR augmentation during the 2008 surge. The heavy and medium platoon operations at the ASP would need to be augmented.

During the initial phase of the responsible drawdown of forces from Iraq, the class V section played an integral role in setting the conditions and reconfiguring the class V structure. The section was able to redistribute 8 million rounds valued at \$10 million to an enduring ASA. The closure of the ATHP enabled the commanders to use the closed site as a consolidated multi-unit ammunition holding area to reduce the explosive storage site footprint.

To better support the using units, the section restructured and streamlined the ammunition shipping process to fill ammunition requests by coordinating with the 3d Sustainment Brigade's transportation section and movement control battalion. The restructure decreased customer resupply wait time from 20 days to 5 days.

Because of the section's proficiency in Standard Army Ammunition System-Modernization (SAAS-MOD), it was able to issue 1,300 lateral transfer directives (LTDs) and track and manage the retrograde of class V. Once they were created using SAAS-MOD, the LTDs were exported into a Microsoft Excel ".slk" file and emailed to all parties involved.

The section also maintained asset visibility of ammunition using SAAS-MOD, the Total Ammunition Management Information System (TAMIS), the Munitions Report, and the Battle Command Sustainment Support System (BCS3). Incorporating these multiple systems

improved forecasting and consumption analysis for 25 mission-critical Department of Defense identification codes (DODICs). Analyzing the expenditures daily using a logistics status report or BCS3 and requiring ammunition managers to submit a monthly expenditure report ensured that the remaining ASAs effectively supported the units' requirements.

How It Was Done

The class V section's Soldiers proactively assisted incoming and outgoing units in all facets of ammunition operations. They reviewed, validated, and approved ammunition requests. Remarkably, the section managed more than 5,000 tons of ammunition valued at more than \$365 million. It tracked 2,500 LTDs moving through the Iraq joint operations area, totaling 1,000 tons of ammunition. The section also revised ammunition procedures in order to resupply units that no longer had an ATHP.

The class V section continued to evaluate the stockage objective for the remaining ASAs against the units' combat load requirements as BCTs transitioned to advise and assist brigades. The section's meticulous attention to detail enabled it to predict call-forward requirements so units would not fall below 75 percent of their authorizations for critical ammunition. This ensured a constant flow of ammunition resupply throughout USD-N and USD-C.

In determining the call-forward requirements, the section compared the ASAs' stockage objectives and the lot locators generated using SAAS-MOD, the ASAs' on-hand quantities, the unit's authorization, the unit's on-hand quantities, and the mission. The section tracked the unit's on-hand quantities and expenditure rate using a logistics status report, BCS3, and TAMIS to collect data on expenditure reporting. Analyzing the collected data provided a common operational picture for future requirements and helped to determine delivery time.

In an effort to reduce excess stocks above approved stockage objectives, the section analyzed mission requirements. It was imperative for units to accurately account for the ammunition they had on hand. This information provided ammunition managers with a current common operational picture. As the force structure was reduced, class V stocks were also reduced to levels required to accomplish ongoing missions without interruption.

The reduction of class V occurred in five phases. The first three phases included retrograding unserviceable ammunition to the demilitarization site in Iraq, retrograding ammunition not expended in the last 12 months, and retrograding ammunition with no current stockage objective to Kuwait. The last two phases included retrograding ammunition in excess of stockage objectives and in excess of critical DODICs.

Contingency stocks were requisitioned, configured, and pre-positioned in order to support the maneuver force during contingency operations. Theater stocks were

reduced by approximately 50 percent in 8 months in conjunction with the reduction of the force while the ASAs were rightsized to the required levels.

Training for the Job

To ensure that Soldiers managing and operating ASPs in the future are better prepared, leaders at all levels must ensure that they are thoroughly trained and cross-trained in the basic ammunition operations functions of forecasting, SAAS-MOD, expenditure reporting, munitions reporting, BCS3, and TAMIS. The Mobilization Ordnance Specific Training program (conducted primarily at Blue Grass Army Depot, Kentucky) is designed to provide ammunition professionals with some of the necessary tools and instruction to help them succeed as ammunition advisers in theater. It includes refresher information, Army sustainment doctrine, and discussion of relevant lessons learned.

The Army Forces Command Standard Army Management Information System Mobile Training Team, offered through Cobham Analytic Solutions, also provides units with additional training on SAAS-MOD. The program includes a combined 40 hours of training on system administration and ASP functional operations.

During its tour in Iraq, the class V section improved the management of excess and unserviceable ammunition and successfully closed one ATHP and converted the theater's only CSA to an ASP, an ASP to an ATHP, and four ATHPs to basic load ammunition holding areas while supplying the forces with required munitions. This was done in conjunction with the retrograde of 5,044 tons of non-mission-essential ammunition to Kuwait, the cross-leveling of ammunition to Afghanistan, and the demolition of unserviceable ammunition.

The class V section also provided invaluable insight when dealing with foreign military sales for other agencies. Forecasting and communication was the key to the overall success of the mission. Throughout the process, the Soldiers of the class V section were consummate professionals with unparalleled dedication to duty. They proved they were capable of managing the Army's three most precious commodities: Soldiers, time, and money.

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The Busiest Brigade Support Medical Company on the Battlefield

BY CAPTAIN MICHAEL A. MILLER

A brigade support medical company deployed to Afghanistan exhibited flexibility and durability while providing support to a widely dispersed force.



An aeromedevac helicopter drops off a patient.

After arriving in Logar Province, Afghanistan, C Company, 125th Brigade Support Battalion, 3d Infantry Brigade Combat Team (IBCT), was responsible for providing medical support to more than 3,600 Soldiers spread across 17 operating bases throughout the Wardak and Logar Provinces. Within the first 30 days of the deployment, C Company treated more than 1,400 patients for conditions ranging from urgent surgery to routine sick call.

During this time, C Company established a medical compound that included a forward surgical team (FST), a Jordanian FST, and level II medical assets. The company also established the brigade medical supply office to provide the 3d IBCT with more than \$800,000 worth of medical supplies.

Unit Training

C Company's medics conducted more than 50 blood

A specialist treats a patient during sick call.

drives, 2 real-world mass casualty events, and several Afghan-partnered field training exercises. It also conducted the battalion's first-ever first responder course for all non-medical brigade personnel.

During this training, Soldiers learned how to establish a landing zone, submit a 9-line medevac request, conduct improved first aid kit familiarization, apply a tourniquet properly, recognize the signs and symptoms of mild traumatic brain injuries (mTBIs), and fill out tactical casualty care cards (formerly known as field medical cards). C Company also trained its Afghan National Army partner units on how to execute independent medical support for their supported units.

Capabilities and Missions

Colocating with the FST, Jordanian FST, and mTBI clinic on the battlefield vastly improved C Company's medical support to the BCT. The company became more robust than a normal level II facility. Radiology and laboratory capabilities were colocated with the FST to ensure more effective and responsive treatment and give the doctors more insight into injuries. The facility lacked only a CT-scan machine to be classified as a level III facility. Since no Army guidance was available on how to command or operate such a robust outfit, after-action reviews were conducted regularly to ensure that the lessons learned were captured for future operations.

Technicians review an x-ray to ensure that it is usable for the doctor.



In addition to working with an already high operating tempo, C Company had to support different missions, such as the quick-reaction force, logistics convoys, and detainee screenings, throughout its deployment. The different types of operations forced the company's leaders to think outside of conventional doctrine to accomplish these missions. This ensured that the unit remained flexible.

To bridge the cultural gap with the Afghan people,



the Army’s new female engagement teams helped relieve male medics from treating or conversing with the local Afghan females unless the situation threatened life, limb, or eyesight. Measures like these made working relationships better and built on the company’s counterinsurgency concept. The trust gained from exhibiting cultural awareness led to fewer attacks on Soldiers, fostered a more welcoming Afghan community, and strengthened the information operations campaign.

Unit Organization

C Company’s mission in Afghanistan was to operate four medical sections—treatment, area support, medical evacuation, and the headquarters—with the intent to run 24-hour operations.

The treatment section had 8 to 12 medics working at any given time, along with a medical provider, a patient hold representative, patient administration specialists, a pharmacist, and the mission squad. The area support section was made up of the physical therapy, dental, radiology, lab, combat stress, mTBI, and preventive medicine sections.

The medical evacuation section was needed to provide responsive force health protection to U.S. and coalition Soldiers and Afghan partners. The headquarters section consisted of the brigade medical supply and company supply sections. Together, they supported over 10,000 coalition force and Afghan National Army soldiers and contractors serving in the area of operations (AO).

One of the most important sections was patient administration. To ensure 100-percent accuracy in

tracking patients, all patients came through this section to be screened before seeing any provider. Two patient administration specialists were responsible for tracking all brigade personnel; they quickly became a very valued asset. They worked 12-hour shifts, 24 hours a day, 7 days a week, and they were called in for every medical evacuation that involved a coalition Soldier, contractor, or local national. All information they gathered was sent to the brigade surgeon cell and disseminated to all units within the AO.

Operations

Along with providing care on a daily basis, C Company was tasked with providing medical care for logistics convoys to outlying forward operating bases. The convoy teams were made up of two medics: one dismounted medic who could exit the vehicle to provide care at a moment’s notice and a second medic who was on standby. With the unit averaging two to three convoy missions per week, the mission squad was often left with only two medics to conduct day-to-day tasks.

The physical therapist assigned to C Company often conducted a battlefield circulation, visiting every location in the AO over a period of 3 weeks. The need for physical therapy was so great at some locations that the therapist often stayed for extended periods. To maintain continuous care, the physical therapy technician, a cross-trained Soldier in military occupational specialty 68W (healthcare specialist), remained at the aid station to ensure that all patients received the highest level of care.

The personnel in the preventive medicine section spent most of their time on the road making monthly visits to each major forward operating base. They also traveled to each combat outpost to ensure that all Soldiers were living and working in healthy conditions. In addition to providing care to U.S. Soldiers, they conducted assessments in local villages and Afghan National Army compounds.

Because of the large amount of

A forward surgical team stabilizes an injured patient.



The C Company tactical operations center serves as the central point for all battlefield tracking.

equipment required to provide dental services and the mobility issues and power requirements associated with that equipment, the dental team was primarily assigned to the aid station. This team traveled only on a limited basis with limited tools, mainly to provide basic dental services and dental care classes.

Valued Attachments

Four sections that normally are not part of C Company’s modified table of organization and equipment—mTBI, FST, Jordanian FST, and aeromedevac—made the company unique. These sections were combat multipliers for C Company and the 3d IBCT. After C Company’s relief in place, the mTBI clinic treated 961 patients, 349 of whom returned to duty.

The mTBI section was an important commodity in the forward fight. Being colocated with a combat stress team enabled the unit to provide oversight for suicidal and depressed patients around the clock. Without this capability, Soldiers would have had to be evacuated to a location with a higher level of care, taking them out of the fight for at least a week because of travel time and reducing their units’ efficiency.

The mTBI team was a mobile commodity that could be at any location within 24 hours of an event. The standard operating procedure specified that all Soldiers exposed to a blast must be cleared by the mTBI team. This not only protected the Soldiers’ near-term health but also protected them from possible future complications.

Having the aeromedevac capabilities colocated increased communication, created better working rela-

tionships, and aided in training. Patient loads can be a major issue for rotary-wing aircraft. Having both units located in the same AO created an advantage for cold-start training events, which improved load times and simplified patient-weight distribution.

During medevacs, Soldiers at the point of injury often sent false reports because of heightened emotions; having a great working relationship often became an asset. Once the pilots and in-flight medics arrived at the site, they relayed accurate information to C Company, which led to better medical services and treatment.

C Company is a prime example of how the Army Medical Department is constantly changing and adapting to the challenges faced by today’s Soldiers. It proves that the Army’s medical community is truly committed to preserving the fighting strength of our Soldiers.

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How to Choose and Use Seals

BY DR. ROGER G. JOHNSTON AND DR. JON S. WARNER

Seals are designed to show if a container has been opened. But research demonstrates that seals are vulnerable to attack and require careful selection, use, and inspection.

Tamper-indicating seals have been in use for well over 7,000 years.^{1,2} Today, seals are widely used for a variety of applications, including cargo security, nuclear safeguards, counterintelligence, theft detection, loss prevention, records security, employee drug testing, and election integrity.³⁻¹¹ They protect money, transportation containers, footlockers, courier bags, filing cabinets, utility meters, hazardous materials, instrument calibrations, drugs, weapons, computer media, warehoused goods, and other critical items.

Despite their antiquity and widespread modern use, quite a few misconceptions, poor practices, and misleading terminology remain when it comes to seals and seal use.¹²⁻¹⁶ This article is a brief primer on how to choose and use seals. It is based on two decades of research by the Vulnerability Assessment Team at Argonne National Laboratory in Illinois.¹⁷⁻²²

What Is, and Is Not, a Seal

First off, it is important to be clear on what a seal is and what it is not. (See the photo at right for examples of seals.) Unlike a lock, a seal is not intended to delay or discourage unauthorized entry (except possibly in a vague psychological sense). Instead, a seal is meant to leave behind unambiguous, nonerasable evidence of unauthorized access. Complicating the issue is the fact that there are “barrier” seals, which are devices that are part lock and part seal. Barrier seals have their uses, but the downside is that they cause a lot of confusion for users and tend to be a compromise, being neither the optimal lock nor the optimal seal for a given application.

Barrier seals are sometimes misleadingly called “security seals” in contrast to “indicative seals,” but this is sloppy terminology. Other terms to avoid include “tamper-proof seal” and “tamper-resistant” seal. There is no such thing as a seal that cannot be spoofed, and the idea of “tamper resistance” applies more properly to locks, not seals.

Defeating a Seal

Unlike a lock, cutting a seal off a container is not defeating it because the fact that the seal is damaged or missing will be noted at the time of inspection. “Defeating” or “spoofing” a seal means to open the seal and then reseal the container it is used on without being detected by the inspection process being used.¹⁸⁻²² “Attacking” a seal means undertaking a sequence of actions intended to try to defeat the seal.

Seal manufacturers, vendors, and users typically overestimate the difficulty of defeating their seals. At least 105 different generic methods are available for potentially defeating a seal.²³ These include, for example, picking the seal open without leaving evidence, counterfeiting the seal, replicating the seal at the factory, changing the serial number, tampering with the database of seal serial numbers, drilling into the seal to allow interior manipulation and

These are examples of the more than 5,000 tamper-indicating seals that are commercially available.

then repairing the hole, cutting the seal and repairing the damage, and not installing the correct seal in the first place and then later replacing it with the correct seal. Full counterfeiting is usually not the most likely attack on a seal unless the adversary is perhaps attacking a large number of seals or has very limited time to access the seal and its container.

A fundamental fact about tamper detection is that a seal is no better than its “seal use protocol.”^{1-6, 10-12, 18} The protocol comprises the official and unofficial procedures for seal procurement, shipping, storage, checkout, installation, inspection, training, reporting, disposal, securing of seal data (such as the recorded seal serial numbers), and securing of the seal reader, if there is one. (Typically, 15 seconds of access to either the seal database or the seal reader allows an adversary to defeat one or many seals in one quick effort.) Modest seals used with a good seal use protocol can potentially provide good tamper detection. Sophisticated seals used poorly will not.^{2, 13, 19-22}

Choosing and Procuring Seals

In choosing a seal, it is important to realize that no seal is unspoofable (just as no lock is undefeatable). There is also no one “best” seal. The optimal choice of a seal depends on the details of your security goals, threats, and adversaries and your personnel and their training; it also depends on the nature of your containers, doors, hasps, physical facilities, and time and budget constraints.

Generally, seals that are complex, difficult to use, or present significant ergonomic problems will be resisted by seal installers and inspectors and will not provide good security.

Every seal needs a unique identifier, such as a serial number, so that an adversary cannot easily swap one seal for another. Independent parts of a seal should have the same serial number if at all possible. Serial numbers should not be easy to erase, dissolve, or buff out (although they often are).

Seal vendors and manufacturers ideally should agree contractually not to sell duplicate serial numbers or replicate logos for anybody (even within your organization) who is not on your organization’s short list of authorized seal buyers. Seal users should test if this agreement is honored. Often it is not.

If the seal is frangible [easily broken], be sure to con-



sider environmental conditions and any rough handling the seal may receive. Also bear in mind that robust seals on moving containers can be a safety hazard in that they can gouge eyes or skin or entrap clothing.

Seals should not be chosen based solely on cost per unit. Much higher costs often are associated with seal installation, inspection, removal, and training. With reusable (typically electronic) seals, be sure to factor in the cost of unit failures, battery replacement, and theft, loss, or vandalism of the seal, as well as the costs of protecting and returning the seals for possible reuse.

Seal Installation

Unused seals must be carefully protected before they are used, not, for example, just left lying around a loading dock. Seals should be assigned to specific individuals who are responsible for protecting and returning unused seals. Unused seals are potentially very useful to an adversary during an attack or for practicing attacks.

Before a seal is installed, it should be checked for manufacturing defects and for evidence of pre-installation tampering (a “backdoor attack”), which can make it easier for an adversary to open the seal later without leaving evidence.

The door, hasp, or locking mechanism and all sides (including the top and bottom) of the container must be inspected. It makes little sense to seal a container with gaping holes in it or to apply a seal to a door, hasp, or locking mechanism that is faulty. (It is surprising how often people do this.)

Seal Inspection and Removal

The common misconception that unless a seal is either missing or blatantly smashed open, no unauthorized access or tampering has occurred could not be more wrong.^{9, 14, 21} In fact, even amateurs can attack seals in a way that leaves little (and sometimes no) evidence.^{9, 14, 20} Seal inspectors can detect tampering with full reliability

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At inspection time, a seal should be compared side by side with a similar, unused seal that has been protected from tampering.

gloss, surface finish, size, and morphology and also check the serial number size, font, feel, and character alignment.

Seals should be inspected for evidence of repair or cosmetic coverups of holes or cuts. Smelling the seal—especially as it is being opened—is often remarkably effective in detecting the presence of epoxies, adhesives, paints, inks, solvents, or coatings that an adversary applied to the seal even months earlier to hide an attack. Alternately, relatively inexpensive, hand-held electronic sensors can detect many of the same chemicals. If time is available during the inspection, rubbing the seal with a wire brush or solvent can be very effective at detecting certain kinds of counterfeit seals or seals that have been repaired.

The door, hasp, or locking mechanism of the container, as well as its sides, top, bottom, and if possible its insides, must be inspected as well to reliably detect tampering.

After a seal is removed, used seal parts must be protected or thoroughly destroyed so that they cannot be used by an adversary for practicing or executing seal attacks. Ideally, the used seals and seal parts should be saved for some period of time to support a forensic examination if questions arise.

The best seal inspectors seem to have an uncanny sense that something is suspicious about a seal without necessarily knowing what. Such intuition should never be discounted. Security managers should also make sure that seal inspectors are not hesitant to report their concerns. Sometimes the consternation and delays that a suspicious seal creates for superiors, security personnel, and logistics managers make front-line employees reluctant to raise their concerns.

Seal inspectors should be tested occasionally with deliberately attacked seals and then heartily rewarded if they detect them. The tests should include both seals that have been blatantly attacked and seals that have been attacked with more subtle methods.

Pressure-Sensitive Adhesive Label Seals

After having studied hundreds of pressure-sensitive adhesive label seals, we have concluded that they do not generally provide reliable tamper detection. People like using these “sticky labels” because they are inexpensive and appear to be easy to install and inspect. However,

they typically are easy even for amateurs to defeat. If you insist on using adhesive label seals anyway, here are some suggestions.

1. Match the type of adhesive to the surface. The best adhesive for bare metal is not necessarily the best for painted metal, plastic, wood, cardboard, paper, or glass.
2. Feel the surface to which the seal will be applied so that you can detect any substances an adversary might have added to reduce adhesion. Precleaning of the surface with a solvent or detergent water is strongly recommended. Residue from previous adhesive label seals must be fully removed.
3. The surface should not be cold, wet, corroded, or peeling.
4. Full adhesion requires a wait of more than 48 hours. This often makes it easy for someone to lift the seal during the first 2 days without causing damage or evidence of tampering. Heat can help speed up the adhesion process. For safety reasons, be careful not to heat any cleaning solvent that has not yet fully evaporated.
5. Ideally, the adhesive, substrate, and ink should be made of the same material, or at least they should dissolve in exactly the same solvent. However, few, if any, adhesive label seals are designed this way.
6. Consider covering the label seal with a plastic protective sheet or clear protective spray while it is in use.
7. During seal inspection, carefully examine the surface area outside of the perimeter of the seal to look for evidence of attack.
8. The best way to detect tampering with an adhesive label seal is to observe (and smell) as the seal is being removed. The seal inspector, however, must understand how the seal is ordinarily supposed to behave and smell.
9. A blink comparator used with a kinematic mount (to exactly reposition the camera without any necessary adjustment) is an excellent way to compare before and after images of seals to look for tampering. (Contact us for more information.)
10. Manufacturers and vendors often emphasize the unique features of adhesive label seals that they claim are difficult or impossible to replicate. In our experience, these claims usually are quite untrue. However, it usually does not matter since most adhesive label seals will be attacked by reusing the original seal, perhaps with some artistic, cosmetic, or repair work.
11. Seals that reveal words like “OPENED” or “VOID” when removed from a surface are largely gimmicks that do not represent serious challenges to an adversary. On the other hand, this feature can be quite effective for flag seals.

ISO 17712

In our view, existing standards for tamper-indicating

seals are not very helpful. We believe that ISO [International Organization for Standardization] 17712, the new international standard for freight seals, does a particularly serious disservice to effective tamper detection.²⁴ ISO 17712 formalizes flawed concepts, encourages misleading terminology, oversimplifies critical seal issues, and compromises cargo and homeland security. We are preparing a detailed critique of this standard, but our advice in the meantime is not to be overly confident about seals that meet the ISO 17712 standard.

Better Seal Training

Because of the shortage of good training materials on how to use seals effectively, we are in the process of preparing a training video that discusses and demonstrates good seal use protocols in general. This video was scheduled to be available on the Internet in June. (See endnote 17.) The best advice and training for tamper detection, however, is always specific to the relevant seals and the security application of interest. We are available to provide seal and cargo security advice for legitimate organizations that face security and tampering issues.

If used effectively (that is, with a good use protocol) and with a realistic understanding of their capabilities and vulnerabilities, seals can provide fairly reliable tamper detection. But they are not a simple-minded, silver bullet for tamper detection or logistics security. We believe that much better seal designs are possible.^{2, 5, 11, 17}

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The Race to 1 September

BY LIEUTENANT COLONEL ROBERT KING AND CAPTAIN LEONARD B. DELLA-MORETTA III

While deployed to Iraq, the 1st Armored Division was tasked with training, mentoring, and assisting Government of Iraq security forces while simultaneously executing a large-scale drawdown.

On 27 February 2009, President Barack Obama directed the Department of Defense to reduce the total number of military personnel deployed in Iraq to 50,000 by 1 September 2010. The directed cap of 50,000 troops in Iraq required the 1st Armored Division, U.S. Division–Center (USD–C), to reduce its footprint from 5 brigade combat teams (BCTs) and 1 combat aviation brigade (CAB) to 2 BCTs without a dedicated CAB. This reduction took USD–C from about 19,000 troops to about 7,000.

The purpose of this article is to provide an example of a successful retrograde of forces from a combat theater. The techniques that the 1st Armored Division used in Iraq can possibly be replicated as the drawdown in Afghanistan is being planned. The challenge that must be met is how to maintain focus on partnership operations while building and executing a drawdown plan and providing the division command group the flexibility required to react to the ever-changing operational environment (OE). This article focuses on how USD–C built operational flexibility into the plan and how the division used that flexibility to react to change in the OE.

The Background

The drawdown plan executed in Iraq can be understood only within the strategic context of time. President Obama had decided to increase the focus of wartime operations in Afghanistan, resulting in additional forces being deployed to Afghanistan from home station locations.

The timing of the surge deployment coincided with drawdown operations that were already planned in Iraq, as directed in the Iraqi Security Agreement approved by the Iraqi Presidential Council on 4 December 2008. This agreement required that all U.S. forces exit the country no later than 31 December 2011. President Obama added the further requirement that no more than 50,000 U.S. troops would remain in Iraq after 1 September 2010. Consequently, the strategic defense transportation system had to be prepared to support the drawdown operations in Iraq while simultaneously surging troops and supplies into Afghanistan.

The OE and mission in Iraq also required that U.S. forces remain involved in training, mentoring, and assisting Government of Iraq (GOI) security forces up until the last possible moment. These operations served two goals in support of one end state. The first goal was to help the GOI security forces for as long as possible until the final drawdown took place. This was done to increase the likelihood that the security forces would be able to deal with the internal security situation in Iraq and deter possible aggressive action from external actors after the U.S. troops’ departure.

The second goal was to increase U.S. situational awareness of the OE during operations. Without having troops partnered with the GOI security forces, U.S. commanders would have a severely degraded understanding of the security situation on the ground. The lack of understanding would hinder their ability to direct the drawdown in a manner that simultaneously achieved the directed benchmarks and reduced risk to the force.

The Waterfall

The drawdown was frequently described as a waterfall because, when it was depicted in a bar graph, the precipitous drop in troop numbers over time resembled a waterfall. From the high of about 19,000 troops, the division shed about 12,000 troops in 6 months. This had to be done in a way that avoided gaps in partnering operations and maintained pressure on the enemy. Some transportation assets had to be shared with the two other divisions in theater and the separate corps units, which were all going through similar personnel and equipment reductions.

The primary USD–C focus was on elements in the Baghdad OE since there was only one brigade in the Al Anbar Province and it would remain in place until sometime in 2011. Although it would lose many “below-the-line units” (units that are smaller than a brigade), the mission for an advise and assist brigade (AAB) would remain until well into 2011.

When the plan was first developed, USD–C leaders decided that brigades would be pulled from the area of operations in two ways. The first way was to sim-



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ply redeploy identified units at the completion of their 1-year tour and not backfill them. This is referred to as “off-ramping.”

An example of off-ramping is the deployment of the 1st AAB, 3d Infantry Division. When it arrived in theater, it essentially conducted a relief in place with both the 30th Heavy BCT and the 1st Brigade, 1st Cavalry Division, while the remaining BCTs in the USD–C OE shifted their battlespaces to cover the rest of Baghdad Province. The 1st Air Cavalry Brigade conducted a relief in place with the 1st CAB and then transferred from USD–C control to U.S. Forces–Iraq (USF–I) control as the theater CAB. This was significant because, as the pool of available rotary-wing assets shrank, one CAB executed the work of three CABs and the assets were direct-support assets, which could not be tasked directly by the division.

The second way brigades would be pulled from the area of operations before 1 September was simple and straightforward. The two remaining BCTs, the 4th Stryker Brigade Combat Team, 2d Infantry Division (4–2 SBCT), and the 2d Infantry Brigade Combat Team, 10th Mountain Division (2–10 IBCT), would thin their lines, battalion by battalion, while simultaneously transferring the battlespace to the remaining BCTs in Baghdad Province. The thinning of the lines was to begin shortly after the parliamentary elections were completed.

Operational Flexibility

Once the initial plan was established, operational flexibility became the priority so that the senior commanders could react as required to the changing battlefield. This was done in three ways. The first was to create a new strategic fixed-wing hub to alleviate pressure on the Kuwait intermediate staging base. The second was to leverage commercial carrier surface assets so that more military transportation units could be redeployed in support of the drawdown. The final way was to turn Taji Air Base into a permanent fixed-wing hub to relieve pressure on the stretched rotary-wing fleet.

With the drawdown in Iraq taking place concurrently with the surge in Afghanistan, it became clear that Kuwait was a chokepoint for all redeploying forces. The number of troops that could flow through Kuwait was capped by the housing capacity for transients and the number of commercial carrier aircraft that could be contracted to provide support on a given day.

Al Asad Airfield was identified as a fixed-wing hub that could be used to redeploy a large portion of the force because of its existing infrastructure and transient billeting capability. Marine Corps forces had used Al Asad for that purpose when Multi-National Forces–West redeployed. The only difference was scale. In order to support the requirement, multiple improvements would have to be made in concert with the Al Asad

Base Control Group, the expeditionary sustainment command, USF–I, the U.S. Army Central customs program manager, and U.S. Air Forces Central.

The primary methods used to increase throughput at Al Asad were to leverage technological capability and apply Lean Six Sigma concepts to create the most efficient process possible. These methods focused on the longest part of the redeployment process, the customs clearance that is required for all forces leaving the U.S. Central Command area of responsibility.

By changing the customs clearance process from a 100-percent hands-on examination to a 90-percent backscatter screening and only a 10-percent hands-on examination, the throughput level was dramatically increased. Once the technology was in place, throughput could be increased by decreasing the overall process timeline. USF–I sent out a Lean Six Sigma expert to study the process and develop a more efficient process. When the new process was coupled with the technological improvements, the throughput was raised to the level required to support the drawdown.

Another way that operational flexibility was created was by using commercial carriers, including local-national-owned carriers and multinational corporation carriers. The drawdown cap of 50,000 personnel placed a significant restriction on the amount of logistics support that could be provided by military logisticians. Before the drawdown, more than five logistics battalions supported U.S. military operations in Baghdad. After 1 September 2010, only one battalion would remain. In order to increase operational lift capability, local carriers were contracted to provide lift capability and to mitigate the identified shortfall.

The Military Surface Deployment and Distribution Command (SDDC) had been working for many years to open the Port of Aqaba in Jordan to U.S. forces’ redeployment cargo in order to reduce the strain on the ports in Kuwait and Iraq. It had also been working with servicing carriers to provide a door-to-door service for units. What this meant was that the contracted carriers would go all the way to a redeploying unit’s forward location and pick up its cargo. The carriers would handle all transportation requirements from that point forward.

The 1st Armored Division made the most of this by coordinating with SDDC to embed a redeployment support team with the division transportation section and pushing it out to all redeploying units as required. This enabled the division to keep forces partnered for a longer period of time since the requirement for a port support activity was reduced.

The final manner in which operational flexibility was created was by opening Taji Air Base as a tactical fixed-wing airfield. Before the drawdown, the airfield had been opened intermittently to allow for Air Force fixed-wing assets to redeploy troops. When the divi-

sion was no longer supported by a dedicated CAB, it became obvious that rotary-wing assets, particularly the CH–47 Chinooks, would be severely taxed.

Opening up Taji as a permanent fixed-wing hub had two effects. The first was that it reduced the requirement being placed on CH–47s, allowing them to be dedicated to other actions. The second was that it allowed the redeploying units stationed at Taji to bypass a layer of the redeployment process; they would not have to fly to Baghdad in order to meet up with the Air Force assets that would take them to Al Asad. This enabled the commanders to keep their forces focused on partnering operations for the longest amount of time possible.

The second order effects of working to create operational flexibility through multiple methods provided additional, unexpected benefits. For example, with Taji being a tactical fixed-wing hub and Al Asad being a strategic hub, the Air Force was able to work more economically thanks to the significantly reduced distance by air from Taji to Al Asad versus Taji to Kuwait. This increase in efficiency condensed the redeployment timeline and allowed troops to remain engaged in partnered operations for longer.

The Election Has No Clear Winner

On 7 March 2010, the Iraqi people went to the polls to elect a new national government. Although the election itself was successful (the population was able to safely exercise its right to vote), it resulted in a near-tie among the leading parties and months of deadlock. The national government was finally formed on 11 November 2010.

The political deadlock changed the strategic environment in which USF–I and USD–C were operating. The senior commanders came to the understanding that the “thinning of the lines” plan was no longer appropriate. Instead, they decided to delay the redeployment of certain units in order to assist the GOI security forces in providing security during the political stalemate.

Two USD–C BCTs had to delay their redeployments. (Neither stayed longer than 365 days.) The 2–10 IBCT maintained its mission, and a revised, condensed flow of forces out of the theater was planned. The 4–2 SBCT offered to make use of the enhanced mobility that a Stryker brigade provides and drive out of Iraq instead of fly. This extended the amount of time that the BCT had to conduct partnership operations. The operation became known as “the Last Patrol,” and the 4–2 SBCT was the last combat unit to leave Iraq. All remaining troops would be there to advise and assist.

The plan to redeploy 2–10 IBCT out of theater was driven by partnering concerns, the return of occupied real estate in Baghdad to the GOI, and the requirement to redeploy the brigade before it reached 365 days in theater. The operational flexibility that USD–C had

built into the initial plan allowed for a change like this to be made at the last minute.

With the 4–2 SBCT conducting the Last Patrol, the overall requirement for units to fly out of Al Asad and Baghdad was substantially decreased. This increased the availability of both Air Force tactical fixed-wing assets and commercial airlift assets out of Al Asad. In the end, the 2–10 IBCT’s redeployment was shifted to a later date and the amount of time it needed to leave the theater was condensed, meeting the commander’s intent.

The 4–2 SBCT’s Last Patrol provided USD–C with multiple first-order benefits. The first was that, since the patrol required a large portion of its combat power to safely move to Kuwait over the roads, the brigade maintained its combat power until the last possible moment. This increased USD–C’s combat power during the political stalemate while still meeting the 50,000 cap and having the troops out of Iraq by 1 September.

The second effect was that it substantially reduced the logistics effort required within Iraq to support the redeployment. The patrol essentially halved the number of Air Force flights required, reduced the number of required rotary-wing flights to near zero, and allowed the expeditionary sustainment command to provide lift capability to other units redeploying.

When 1 September arrived, USD–C had accomplished its tasks to reduce its footprint from about 19,000 to 7,000 troops and redeploy or turn in over 10,000 pieces of equipment. It had done so while maintaining its focus on partnering operations, supporting the Iraqi national elections, and providing operational flexibility to senior commanders to respond to situations as they arose. These accomplishments laid the ground work for the next drawdown that took USF–I from 50,000 to 0 troops by 31 December 2011.

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What “Right” Looks Like

BY MAJOR GENERAL LARRY J. LUST, USA (RET.)

Soldiers learn procedures by watching and imitating their leaders. Therefore, leaders should ensure they are setting a good example by following correct procedures and focusing on doing things right.

The commander of a company, troop, or battery has many responsibilities, but none is more important than ensuring that the members of his unit know what “right” looks like. If you are preparing to assume the duties and responsibilities of command, or if you have recently assumed command, you may be wondering if you really know what right looks like.

The answer to this question will depend a great deal on the battalion and company commanders you have served under or observed before you took command. If your own commanders set the right example, you probably do know. This article outlines several actions to assist you in making sure that your own Soldiers (both officers and enlisted) know what right looks like.

Chain of Command

First, never miss an opportunity to reinforce the chain of command. Your unit’s chain of command will be no stronger in combat than you make it in garrison and during training events. Does your first sergeant stand in front of the formation and pass out information directly to the Soldiers, or does he rely on the platoon sergeants and squad leaders to relay information?

If your first sergeant uses platoon sergeants to inform squad leaders and squad leaders to keep the unit’s Soldiers informed, he is strengthening the unit’s chain of command. This does not mean the first sergeant and the platoon sergeant cannot or should not address the company or platoon. But when they do, it should be on matters of considerable importance to the successful operation of the company or platoon.

No doubt, folks will tell you that passing information through the platoon sergeant and making the squad leaders the focal point runs the risk of information not being passed exactly as the first sergeant conveyed it to the platoon sergeant. This viewpoint is valid; however, requiring subordinate leaders to take notes when the first sergeant and platoon sergeant are putting out information will help ensure that information is passed accurately.

Noncommissioned officers who cannot pass information accurately in garrison or during training events may have difficulty passing orders and information

accurately on the battlefield. In tight spots on the battlefield, Soldiers will look to their squad leaders for guidance and direction. Those Soldiers need to have confidence that their leaders are providing accurate guidance and orders.

The Arms Room

Second, learn how your arms room operates. The unit armorer should not be the individual charged to determine if weapons are clean. That responsibility belongs to your platoon sergeants. The unit armorer should receive weapons into the arms room when the platoon sergeant says they are ready. The unit armorer should inspect weapons for cleanliness after they are in the arms room and report unsatisfactory weapons to the first sergeant and executive officer. One or both of these individuals should then inspect the weapons identified by the unit armorer.

When weapons are inspected by the first sergeant or executive officer and found to be unsatisfactory, the appropriate platoon sergeant and squad leader should personally bring the deficient weapons to standard. The platoon sergeant and squad leader, not the Soldiers, should clean the deficient weapons to standard. Experience tells me you will need to do this only once before weapons not being cleaned to standard ceases to be an issue. To set the conditions for success, ensure sufficient weapon cleaning supplies are on hand and available to the Soldiers.

Licensing Procedures

Third, inspect licensing procedures in your unit. Specifically, who says a Soldier can operate the equipment you have entrusted to the platoon’s leaders? Whether operator training and licensing are performed within your unit or centralized at another level, the platoon leader and platoon sergeant are the individuals you should hold accountable for ensuring that the unit’s equipment is operated correctly and safely. This being the case, these two individuals should also be the approving authority for who operates equipment.

Who should operate equipment is different than who should be licensed. Licensing is an administrative re-

ACTIONS TO ENSURE YOU KNOW WHAT RIGHT LOOKS LIKE

1. Never miss an opportunity to reinforce the chain of command.
2. Learn how your arms room operates.
3. Inspect licensing procedures in your unit.
4. Conduct all unit formations according to Field Manual 3–21.5, Drill and Ceremony.
5. Pay attention to maintenance.
6. Pay attention to duty rosters.

quirement to ensure that a Soldier receives appropriate operator training and demonstrates appropriate equipment operating skills in front of an individual who is authorized to issue operator licenses. The platoon’s leaders should determine who will operate the platoon’s equipment and ensure that all Soldiers are knowledgeable and skilled in operating that equipment.

Unit Formations

Fourth, conduct all unit formations according to Field Manual (FM) 3–21.5, Drill and Ceremony. Junior ranking Soldiers (both enlisted and officer) will learn what is right by watching how you and your first sergeant execute formations. If you operate your formation according to FM 3–21.5, you will ensure your Soldiers know what right looks like in the eyes of professionals.

Maintenance

Fifth, pay attention to maintenance. A great number of areas can and should be checked to determine if your unit knows what right looks like when it comes to maintenance. Start by learning what your vehicle operators know about their vehicles and maintenance shop operations.

If your unit operates high-mobility multipurpose wheeled vehicles, ask if checking for water in the fuel is a “before” or “after” preventive maintenance check. Does each vehicle have a rubber hose attached to the fuel drain valve? Has the unit provided operators with transparent containers for fuel samples? Where do they dispose of samples containing water?

If an operator does not say that checking for water in the fuel is an after-operations check, ask for the reference in the operator’s manual. This action will do two things for you: It will let you know if the operator has an operator’s manual, and you will be able to show the operator where to find the correct information in the manual.

If the operator says he has a rubber hose attached to the fuel drain valve, have the operator show it to you so you can judge whether or not the hose is of sufficient length to allow fuel to be drained without spillage. If

an operator lacks this item, have the operator show you how he drains fuel to check for water without spillage. The unit should have issued the operator a transparent container to collect the draining fuel. If the unit has not issued such containers, have the operator show what he uses to collect a fuel sample and how he inspects it for water at the bottom of the container.

The unit is responsible for providing a location for operators to deposit contaminated fuel samples. If these contaminated fuel sample collection stations are not convenient, some operators will dispose of their contaminated samples in an environmentally unfriendly manner.

Duty Rosters

Finally, pay attention to duty rosters. Are they posted a minimum of 10 days before the date the duty will be performed? I suggest 10 days since this will generally give Soldiers sufficient time to cancel prepaid activities and receive refunds. Does your unit maintain a weekend duty roster for unscheduled tasks, or are the personnel who happen to be in the barracks tasked? If such a duty roster exists, does it include all unit personnel or just those in the barracks?

Unscheduled weekend tasks are assigned to the unit, not just to the personnel who happen to be in the barracks. The weekend roster for unscheduled tasks should include all nonexempt personnel within the unit, and these individuals should be required to meet a recall time standard to perform the duty.

These six actions provide a starting point for evaluating your unit’s understanding of what right looks like. As you execute the duties and responsibilities of command, remember that the junior Soldiers in your unit, both officer and enlisted, will depart your unit thinking they have seen what right looks like. Your responsibility is to ensure that they have.

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Army Forces Command Presents New ARFORGEN Structure at AUSA Sustainment Symposium

Brigadier General John R. O'Connor, the Deputy Chief of Staff, G-4, for the Army Forces Command (FORSCOM), laid out changes to the Army Force Generation (ARFORGEN) processes during the Army Sustainment Symposium and Exposition hosted by the Association of the United States Army (AUSA) from 8 to 10 May 2012 in Richmond, Virginia.

The FORSCOM G-4 said that while the current ARFORGEN process has served well over the past 7 years, it is time for a change.

"There will be decreasing depth requirements changing force structures," said General O'Connor. "We all know there's a significant fiscal constraint [im]posed on our Army, so we need to have the right force ready at the right level and of course at the right time."

The Army Chief of Staff approved a new ARFORGEN model on 28 April. This model includes three force pools: the mission force pool, the rotational force pool, and the operational sustainment pool.

"The old model attempted to manage the entire force in one force pool, and the new model again has three," said General O'Connor, noting the return to a tiered readiness model.

The mission force pool distributes forces to a high-

demand requirement and to theater-assigned forces that do not have sufficient force structure to be progressive. Units in this pool, including those in Korea and other forward-deployed locations and any "low density unit that must be at a high state of readiness at all times," will be required to attain progressive readiness and stay sustained.

The rotational force pool includes units in and ready to enter Operation Enduring Freedom, Kosovo Force, and other rotational missions.

The operational sustainment pool is made up of National Guard divisions, the 21st Armored Division, the 11th Armored Cavalry Regiment, and other units that are required to meet operational requirements and to maintain a level of readiness in a "modified progressive" status. General O'Connor noted that these units can be pulled up into the available pool at any time but will be maintained at a lower state of operational readiness.

"You're starting to hear the word 'rotational Army force,'" said General O'Connor. "We're going to align brigades to reach into CENTCOM [the U.S. Central Command] to Southeast Asia to the Pacific, and then it will be the XVIII Airborne Corps expeditionary forces. So you're going to be aligned, and that's how you're going to set your conditions for future training."

While the old ARFORGEN model was based on a supply base by default (generating a set amount of capability and capacity every year unless it is required to produce more), the new model is demand based. It activates only the forces needed to meet operational requirements.

Operational Energy Panel Outlines Initiatives for Greater Flexibility on the Battlefield

The Army Sustainment Symposium panel on operational energy laid out the challenges that operational energy creates and the many options operational energy initiatives provide commanders in the warfight.

Colonel Paul E. Roeger, chief of the Army's new Operational Energy Office under the Deputy Chief of Staff, G-4, Department of the Army, chaired the panel and noted that operational energy is a fundamental operational capability and makes the force more agile, lethal, expeditionary, versatile, and sustainable when used in the right way.

The Army faces three challenges concerning operational energy: situational awareness and the ability to manage the energy usage, the need for a smaller footprint, and the need for flexibility.

"That sounds like [we're] saying that we need to use less, but the fact is, since we don't have the management capability, we're really wasting a lot of energy and not getting some of the synergies that we could," said

Colonel Roeger. The operational energy chief noted that in the future Army leaders will use information, knowledge, and analysis to be more aware of how energy is used.

He said that solar panels and other technologies that reduce the number of convoys to forward operating bases (FOBs) save energy, and more importantly, they offer an alternative to commanders so that they are not relying on just one course of action.

Colonel Phillip VonHoltz, commander of the Army Petroleum Center, noted that in Afghanistan the Army is using an average of 22 gallons of fuel per day per Soldier—20 more gallons than the average

Soldiers used during World War II. The Army also paid about a billion dollars more for fuel in fiscal year (FY) 2011 than in FY 2010, and it is on track to pay the FY 2011 amount again in FY 2012. Forty percent of the fuel dispensed in Afghanistan in FY 2011 was used in generators.

An initial capabilities document for the Army Operational Energy Office was approved by the Department of Defense J-4 on 18 April. This document outlines the gaps that exist and the changes that will be made to overcome operational energy challenges.

"We're going to see that [a network concept] in terms of smart grids. We're going to see that in terms of management systems. That's going to be sort of pervasive in our energy management approach," said Colonel Roeger. "Today on the battlefield, our commanders don't have that [situational awareness] in terms of operational energy, so we've got to give them that ability to just see where do I stand, when do I need to refuel, what kind of alternatives do I have available and just blend that into their operational activities, planning, and execution."

Fielding of new technologies, including solar panels, water reuse systems, and new advanced medium-size mobile power source generators (which save a fifth of a gallon of fuel per hour of use and 4,800 gallons over the life of a 10-kilowatt generator), to FOBs have been the focus of initial operational energy initiatives. But changes to major systems, including the M1 Abrams tank and helicopters, are also coming.

"We've got an improved turbine engine program that we are going to build into our Black Hawks and Apache

aircraft that's going to save 20 percent on fuel consumption," said Colonel Roeger. He noted that the system change will also provide greater coverage of more terrain and better system performance.

The Bradley fighting vehicle also will receive drive train improvements to reduce fuel consumption and make it more maneuverable.

Anyone interested in more information on Army Operational Energy projects can visit the Army Capabilities Integration Center webpage on operational energy located at www.arcic.army.mil/operational-energy.html.

Deployment Training to Save Energy

As part of their mission readiness exercise at the Joint Multinational Readiness Center in Hohenfels, Germany, 173d Airborne Brigade Combat Team Soldiers trained on solar-powered technologies for their upcoming deployment. The Soldiers learned how to operate and maintain multiple hybrid-power management systems as part of the Energy to the Edge (E2E) Program. The E2E Program supports small tactical units operating in remote locations with suites of energy gathering, management, and distribution systems. In this photo, Rapid Equipping Force trainers educate Soldiers on the SolarStik, which will provide remote outposts with a reliable solar energy source. (Photo by Ali Sanders, Rapid Equipping Force)



RECENTLY PUBLISHED

Army Techniques Publication (ATP) 3-04.94, Army Techniques Publication for Forward Arming and Refueling Points, published 26 January 2012, describes forward arming and refueling point (FARP) operations of aviation units. The ATP provides a comprehensive overview of the purpose, organization, and operation of FARPs and includes planning considerations for the set up and transportation of the class III (petroleum, oils, and lubricants) and class V (ammunition) needed for these operations. More detailed information on FARP operations is available in Field Manual (FM) 10-67-1, Concepts and Equipment of Petroleum Operations, and FM 4-30.1, Ammunition.

FM 1-04, Legal Support to the Army, was published 26 January 2012. The field manual provides authoritative doctrine and practical guidance for commanders, judge advocates, legal administrators, and paralegal Soldiers across the spectrum of conflict. The field manual also outlines the modular organizational structure of the Judge Advocate General Corps and discusses the delivery of legal support to a modular force.

Logistics Leaders Outline Force Design Changes

During the Army Sustainment Symposium, held in Richmond, Virginia, this May, key Army sustainment leaders laid out how Army units will change to become the Army of 2020.

Brigadier General John R. O'Connor, the Deputy Chief of Staff, G-4, for the Army Forces Command (FORSCOM), said that no later than fiscal year (FY) 2015, force structure reductions and equipment retrograde are expected to facilitate increased readiness and the ability to conduct home-station training. In the years that follow, FORSCOM's predominant readiness focus will be contingency mission sets.

"No later than FY 16, sufficient joint, intergovernmental, multinational, and interagency capabilities will be available to corps and divisions," said General O'Connor. "Not later than [FY] 17, end strength decreases for the Active component will be at 490,000, Army National Guard 450,000, and USAR [the Army Reserve] at 205,000."

To support Army structure changes, the "Army 2020" effort shapes the force to meet the operational environment with this smaller end strength. Major General James L. Hodge, the commanding general of the Army Combined Arms Support Command, explained that under this design all brigade combat teams (BCTs) will include a

third maneuver battalion. According to General Hodge, maneuver commanders also want a brigade engineer battalion (BEB) in each Stryker, infantry, and heavy BCT. "So we're looking at converting special troops battalions into BEBs for those formations," said General Hodge.

He noted that reductions in engineer vertical and horizontal capabilities inside of the BCT are being considered. So are eliminating military police and combat observation/lasing teams from the BCTs and migrating those capabilities to echelons above brigade.

Within the sustainment community, moving capabilities out of the brigade support battalion formations is being considered for water production, infantry troop transport, bulk fuel, and some distribution provided by heavy expanded-mobility tactical trucks.

"We'll migrate that out of the BCT in order to help keep the force size where we want it," said General Hodge. "And we'll move those capabilities to echelons above brigade."

In regard to fuel distribution, General Hodge noted that there is concern that so much echelons-above-brigade capability resides in the Reserve component, including petroleum, oils, and lubricants (POL) planning at the expeditionary sustainment command and theater sustainment command levels.

"Some of the specific gaps associated with it are early-

entry tactical receipt distribution, mission command, POL liaison, quality assurance and quality supervision, the engineer oversight that you need when you put in the IPDS (the inland petroleum distribution system), and of course, some technical expertise at all echelons," said General Hodge.

This is why a force design update (FDU) is currently underway for POL. Also undergoing review is the military occupational specialty 92Y (unit supply specialist) force design, which is expected to improve property accountability as units return to the unit maintained equipment program.

"We've identified through our processes that we have a significant gap in terms of something as simple as the basic number of Soldiers who are in company-level supply rooms," said General Hodge. "This FDU gets at a phased approach of getting the right numbers of our Soldiers to work in the supply rooms to handle the tremendously significant number of transactions that they have to handle."

Army Acquisition Corps Continues to Grow

Despite the overall downsizing trend the Army will see in coming years, the Army Acquisition Corps is expected to double its workforce by the end of fiscal year 2013.

The corps continues to seek qualified officers and noncommissioned officers (NCOs) to be part of its ranks. Officers should be in their 6th or 7th year of service and be a captain who is branch qualified in another specialty in order to transfer to functional area 51. On the NCO side, the Acquisition Corps is seeking sergeants and staff sergeants with less than 10 years of service who are in balanced or overstrength military occupational specialties (MOSSs) to transfer to MOS 51C (acquisition NCO).

Interested Soldiers should send a reclassification packet through their appropriate human resources channels. The Army Acquisition Support Center at Huntsville, Alabama, holds quarterly boards to select the best-qualified Soldiers.

Troop Drawdown Turns Sustainment Leaders' Focus to Property Accountability

As units prepare to leave Afghanistan and budgetary constraints tighten, sustainment leaders are placing more emphasis on property accountability. During the Army Sustainment Symposium, Lieutenant General Raymond V. Mason, the Deputy Chief of Staff, G-4, Department of the Army, told attendees that a task force led by Major General Timothy P. McHale has returned a report on the

PROFESSIONAL DEVELOPMENT

New Commander's Emergency Response Program Course Launched by the Army Financial Management School

A new and extensive distance learning course has been developed to support the Commander's Emergency Response Program (CERP). Authorized by Congress, CERP has allowed deployed military commanders to determine how U.S. tax dollars will be used to meet urgent humanitarian relief and reconstruction requirements for local populations in Iraq and Afghanistan.

During development, the new CERP course was under the management of the Army Financial Management School and the Training Development Directorate of the Army Soldier Support Institute. Although the initial CERP courseware launched in 2009 was only a 16-hour distributed learning course, the new course contains 62.5 hours of interactive multimedia instruction.

The CERP course consists of six tracks:

- Track 1, CERP Foundation.
- Track 2, CERP for Commanders.
- Track 3, CERP for Resource Managers.
- Track 4 CERP for Project Managers.
- Track 5, CERP for Purchase Officers.
- Track 6, Paying Agent Operations.

Once the first track is completed, students can enroll in any of the follow-on tracks, and they can be taken in any order. Having the option to opt-out of tracks will alleviate redundant training for students who have previous training and experience in CERP.

CERP training is designed for Active Army, Army National Guard, Army Reserve, and sister services supporting CERP in predeployment training environments and theater missions. The new CERP training can be accessed through the Army Learning Management System.

The Training Development Directorate's point of contact for CERP training is A.D. Denson, who is available by telephone at (803) 751-8295 and by email at a.d.denson.civ@mail.mil.

Last Mine-Resistant Ambush-Protected Vehicle Out of Iraq Moves to Fort Hood

The last mine-resistant ambush-protected vehicle driven out of Iraq was loaded onto the Ocean Crescent on 24 March at the sea port of debarkation in Kuwait. The vehicle was en route to Fort Hood, Texas, to be put on display at the 1st Calvary Division Museum.



state of the Army’s property accountability. “We compared it to the report done right after the Vietnam War,” said the G-4. “Many of the same observations of property accountability problems that were found in 1970 were found in 2012.”

According to General Mason, between 50,000 and 60,000 pieces of rolling stock are currently in Afghanistan.

“In fact, we’re drawing it down, but as we’re beginning to clean up these forward operating bases, we find more and more stuff, said the G-4. “Lots and lots of equipment is starting to bubble to the top, and that’s ok. We want to do that. We want to bring that to record and bring it back and get it to our units.”

One area the G-4 is focusing on to improve property accountability is a move back to the unit maintained equipment program (UME). General Mason said that while letting the Army Materiel Command and contractors manage equipment made sense in the short term, it came with unintended consequences, including a lack of individual responsibility for equipment.

One positive that has resulted from the Army’s years at war is the state of readiness of its vehicle fleet. General Mason noted that before 9/11 the Army’s vehicle fleet was only at 70 percent capacity. It is now at 90 percent at the macrolevel. “The readiness of our fleets [is] actually magnificent,” said General Mason. “Our challenge of course is how to maintain it.”

According to Brigadier General John R. O’Connor, the Deputy Chief of Staff, G-4, for the Army Forces Command, 93 percent of deployed units will be executing UME by the end of fiscal year (FY) 2012. By FY 2013, 100 percent of units will be inducted into the program.

“[The] Army Sustainment Command will continue to offer contract maintenance and accountability augmentation to those forces as required,” said General O’Connor. “Under the UME contract, costs have been reduced \$600 million in FY 10 to [a] now projected \$91 million in FY 13, so you can see the steep decline in having a contract capability where we’re going to put it back into the hands of the Soldiers to take care of this equipment.”

The command discipline programs for supply, maintenance, deployment, and contracting will play major roles in taking care of equipment too.

“It’s about reinvigorating systems that existed,” said General Mason. “We want to really leverage the skill sets that we’ve learned over the last 10 years . . . but then we need to add some of the things that we’ve let atrophy.”

In-Transit Visibility Equipment Recovered From Iraq

Along with the departure of troops and equipment from Iraq came the removal of fixed radio-frequency in-transit visibility readers throughout the country. Product Manager, Joint Automatic Identification Technology has recovered and redistributed the readers to meet require-

ments in Afghanistan and other locations and reassigned the supporting field service engineers who were stationed in Iraq.

At the peak of operations, 118 fixed reader sites throughout Iraq were reading and reporting information on up to 124,000 radio-frequency identification tags a month.

New MC4 Training Tool Simulates Medical System Used During Deployment

Medical Communications for Combat Casualty Care (MC4) has developed a simulation tool called the Simulation Medical Data Server (SMDS) that provides simulated data to the mission command application used by the medical community during deployments, the Medical Situational Awareness in the Theater (MSAT) portal. MSAT is the joint automated solution that serves as the joint medical community’s mission command system.

SMDS has the capability to provide operations and clinical operations sections with real-time information about casualties during simulation exercises. It has also been successfully integrated and synchronized with the casualty information resident within current battlefield simulators.

MC4 partnered with the Logistics Exercise and Simulation Directorate, the material developer for the Joint Deployment Logistics Module (JDLM), to integrate SMDS into JDLM. This integration has brought medical personnel deeper into training scenarios by making it possible for clinicians to track patient flow from role 1 to role 3 units during training. The integration also lets medical leaders determine if a nuclear-enhanced conventional weapon has been employed or if a chemical, biological, radiological event has taken place. SMDS also allows senior medical staff officers and medical mission command units to participate in large joint simulation training exercises using their go-to-war system.

CORRECTION

In the May–June 2012 issue of *Army Sustainment*, the caption for the cover included an incorrect date. The Ordnance Corps Bicentennial was 14 May 2012, not 24 May 2012 as stated in the caption.

Also, the captions of the photos on pages 53 and 54 are reversed. The photo on page 53 shows an M1 Abrams tank being loaded onto a flatbed trailer. The photo on page 54 shows a piece of engineer equipment being loaded onto a trailer.

Writing for *Army Sustainment*

- If you are interested in submitting an article to *Army Sustainment*, here are a few suggestions. Before you begin writing, review a past issue of *Army Sustainment*; it will be your best guide. Then follow these rules:
- ❑ Keep your writing simple and straightforward (try reading it back to yourself or to a colleague).
 - ❑ Attribute all quotes.
 - ❑ Identify all acronyms, technical terms, and publications (for example, Field Manual [FM] 4–0, Sustainment).
 - ❑ Do not assume that those reading your article are necessarily Soldiers or that they have background knowledge of your subject; The *Army Sustainment* readership is broad.
 - ❑ Submissions should generally be between 800 and 4,000 words. (The word limit does not apply to Spectrum articles. Spectrum is a department of *Army Sustainment* intended to present researched, referenced articles typical of a scholarly journal.)

Instructions for Submitting an Article

- ❑ *Army Sustainment* publishes only original articles, so please do not send your article to other publications.
- ❑ Obtain official clearance for open publication from your public affairs office before submitting your article to *Army Sustainment*. Include the clearance statement from the public affairs office with your submission. Exceptions to the requirement for public affairs clearance include historical articles and those that reflect a personal opinion or contain a personal suggestion.
- ❑ Submit the article as a simple Microsoft Word document—not in layout format. We will determine layout for publication.
- ❑ Send photos and charts as separate documents. Make sure that all graphics can be opened for editing by the *Army Sustainment* staff.
- ❑ Send photos as .jpg or .tif files—at least 300 dpi. Photos may be in color or black and white. Photos embedded in Word or PowerPoint will not be used.
- ❑ Include a description of each photo submitted and acronym definitions for charts.
- ❑ Submit your article by email to leeealog@conus.army.mil or by mail to—

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